The Builder.

VOL. LIV. No. 2367. SATURDAY, JUNE 16, 1888.

ILLUSTRATIONS.

"Le Chant" and "La Musique": Statues intended for the Grand Staircase of the Hôtel de Ville, Paris.—M. Barrias, Sculptor ... *Two Single-Page Typo-Gravures.*
Design for the Colfe Grammar School, Lewisham Hill.—Messrs. Mitchell & Butler, Architects ... *Double-Page Typo-Gravure.*
Alterations and Additions to Lampton Hall, Middlesex.—Mr. H. O. Cresswell, A.R.I.B.A., Architect ... *Single-Page Photo-Litho.*
"Old Palace," Richmond, Surrey, as altered.—Mr. H. O. Cresswell, A.R.I.B.A., Architect ... *Single-Page Photo-Litho.*
Ennismore Gardens, Dover.—Mr. James Neale, F.S.A., Architect ... *Single-Page Photo-Litho.*
Houses, Rosslyn Hill, Hampstead.—Mr. James Neale, F.S.A., Architect ... *Single-Page Photo-Litho.*

Blocks in Text.

Plan of First Floor of the Old Palace, Richmond, Surrey ... *Page* 433
Ground-plan of Houses, Rosslyn Hill, Hampstead ... 433
Ground-plan of Houses, Ennismore-gardens, Dover ... 434
Diagram illustrating Paper on Iron in "The Student's Column" ... 436

CONTENTS.

The Life of Street ... 423
Notes ... 425
Architecture at the Royal Academy.—VII. ... 427
Machinery at the Glasgow Exhibition ... 428
Old London Bridge; and Claude De Jongh's Painting of 1630 ... 429
Royal Institute of British Architects ... 430
Examinations at the Sanitary Institute of Great Britain ... 433
Sculpture for the Hôtel de Ville, Paris ... 433
Colfe's Grammar School, Lewisham Hill ... 433
Alterations and Additions to Lampton Hall, Middlesex ... 433
The Old Palace, Richmond, Surrey ... 433
Houses, Rosslyn Hill, Hampstead ... 433
Houses, Ennismore-gardens, Dover ... 434
Some Evidence given before the Metropolitan Board of Works Inquiry Commission ... 434
Sales of Building Land ... 435
"Dry Rot" again ... 435
"Illegal Remuneration of Town Surveyors" ...
The Student's Column: Iron ... 436
Recent Patents ... 436
Recent Sales of Property ... 436
Meetings ... 437
Miscellanea ... 437
Prices Current of Materials ... 438

The Life of Street.

IT may be questioned whether it is a very wise thing for a son to undertake the biography of his father, more especially when the son is carrying on the practice of the same profession in which the father was distinguished. It is almost inevitable that in such a case the biographer should assume practically the part of an advocate; it may even be thought that it is a part of filial duty to do so; and it certainly cannot be said that Mr. Arthur Street, in writing the life of his father,* has kept clear of this temptation. The whole volume is a tribute of admiration to the personal and professional character of the subject of it. It is true, as the biographer remarks in his brief preface, that the subject of his father's home life, "the more intimate side of his character" is hardly touched on, though this is really the one side of a biography which a near relation would have special opportunity for knowing and doing justice to. But in regard to Street's artistic career, the view taken throughout the book is not only that everything he did was admirable (which would be quite natural and excusable), but that all who differed from him or ventured to criticise his work were wrong and foolish, or were actuated by unworthy or hostile motives. That this was the general view entertained by Street himself towards those who differed from him professionally was well known; but it is a pity that his son should have stereotyped it in a biography.

Perhaps this impression of strong partiality of judgment, which the perusal of the Life certainly leaves, may be supposed to be to some extent condoned by the statement in the preface, that the book was "originally intended only to be a private record of some of my father's opinions and a few of his more important works," and was gradually expanded into a memoir. It is to be regretted that in that case the materials were not put into the hands of some one who would have been able to produce from them a biography written in a more impartial spirit, since what is quite suitable in a private record may be much less so in a published biography. Apart from this question, however, there is nothing to complain of in the form of the book, which does not need the apology made by the author for his inexperience as a writer; it is, perhaps, a little rambling, but in general it is very well written.

It seems to have been almost by a happy accident that Street became an architect. His elder brother had a great love for sketching Mediæval work, and gave George Street the first interest in sketching; and when some Egyptian sketches, by Mr. Owen Carter, of Winchester, were sent to the Streets at Crediton (where they then lived) by a mutual friend, the momentary exclamation of Mr. Street, senior, "This would be the very thing for George!" led eventually to the idea of asking Mr. Carter to take him as a pupil into his office at Winchester. Thence, after three years, he presented himself at Scott & Moffat's office, armed with a roll of drawings, and an introduction from Mr. Edwin Nash, and was accepted at once. The drawings for the cathedral at Hamburg were then in progress, and he was taken on provisionally to help in the stress of work, but did so well that the provisional engagement became a permanent one, and lasted till the time when he found so much to do as to justify him in confining himself to his own work. His first commission on his own account, that for Biscovey Church, was obtained in the manner which Vitruvius has recorded his disapproval of, viz., by asking, and not by being asked. His sister heard from a friend of a church that was projected in Cornwall, and immediately wrote to her brother suggesting that he should set to work at drawings for the said church, and that she should get them submitted to Mr. Prynne, the clergyman who was intending to build it. This was a sisterly part, no doubt, and at all events better than the canvassing of Boards of Guardians, which is on record in another architectural biography. Mr. Prynne's first question was ominous:—"Has your brother got much work to do?" but fortunately it appeared that to find some one who would give his whole time to the work was exactly what was desired; and Biscovey soon led to other work in Cornwall, and a considerable extension both of professional and social ties there, where he had to go for some weeks together, several times a year, to look after work which lay all in the same neighbourhood. These seem to have been very pleasant times, when work was mingled with dinners, picnics, and dances, in a good old-fashioned style.

In 1850 Street gave up his chambers in town and settled at Wantage, a step partly arising out of his introduction to the Bishop of Oxford, and his appointment, shortly afterwards, as architect to the diocese,—an appointment, however, which it appears to be very naïvely admitted that he owed partly to his willingness to take the office gratuitously, while the other candidate, the late Mr. Ferrey, wanted 100*l.* a year for his services. These are, of course, often of a rather nominal and honorary character, but it is amusing that it does not seem to occur either to the writer of the letter in which this is mentioned, or to the author of the biography, that this was not quite the best way of being appointed. A removal to Oxford itself in 1852 was a natural result, and only three or four years after this it became evident that a move up to London, by way of ceasing to be "a provincial architect," was advisable, and the family centre (for he had been married some little time before this) was transported to Montague-place, Bloomsbury, incorrectly spelt in the book "Montagu-place," which is the name of the West-End street, not of the Bloomsbury one. "From this date till his death," says Mr. Street, "one important commission succeeded another in a way which could hardly have been the case had he decided to live permanently away from the great centre"; and this is probably true. Subsequently his London house was one at the corner of Cavendish-square and Cavendish-place, a position which he thought, and with reason, one of the most desirable in London; but in the later years of life he found great enjoyment in the establishment of a small country-house which he built for himself on a beautiful site near Dorking.

Before touching upon some of the special traits of charactor and of professional habit which are brought out in the biography, we may refer to some of the leading works in which Street was engaged, about which a good deal is said by his biographer, some of whose conclusions and opinions certainly call for notes of interrogation. The paramount subject of the history of the Law Courts competition, and the merits of the building itself, naturally occupies a good deal of space.

Mr. Street is exceedingly anxious to prove that his father was all along right about the Law Courts, and every one else wrong; but he will hardly get many people to accept his verdict on the matter, though he has decided points to make, and makes some of them well, in regard to the nature of some of the criticisms which were directed against the design. But,

* Memoirs of George Edmund Street, R.A.: 1824 to 1881. By his Son, Arthur Edmund Street. London: John Murray. 1888.

in the first place, Mr. Street does not put the case fairly or correctly in regard to the claims of Mr. E. Barry to have been selected. It will be remembered by our older readers, though many of the younger generation may know little about it now, that the committee of selection on the competition drawings adjudged Barry's plan and general practical arrangements to be decidedly the best, but preferred Street's design, and recommended that they should be commissioned jointly, and requested to mutually adapt their respective plan and design to work together. This was, no doubt, a perfectly futile idea; it was at variance with any consistent or logical idea of architectural design; and it was out of the question that men with such different views and feelings on architecture should be able to work together. But the biographer does not represent correctly the undoubted claim which Barry had, on the ground of the terms of conditions. These, as was pointed out in our columns at the time, distinctly laid it down that plan and internal arrangement were to be considered first and foremost in the competition, the section making this provision bearing the heading, "Utility to be attended to before effect." There can be no doubt that, on that footing, Barry had a distinct and positive claim to be considered the successful competitor; a remark which we (in the present time) make without any prejudice, inasmuch as we do not consider that Barry was a genius in architectural design in the same sense that Street was. But on the published conditions of the competition he won it, and had every right to consider himself ill treated in being dropped, as it must be remembered that the present plan of the Law Courts is not that which Street submitted in the competition.

As to the many criticisms on the design, Mr. Street has reason in some of his counter-criticisms on them. Fergusson's opposition to the design, though we may not dissent from some of his conclusions, was exceedingly futile in many of its arguments; for instance, his objection to the large vaulted hall, on the ground that no Mediæval secular hall of that kind was ever vaulted, was entirely beside the mark: it was a mere setting up of precedent. What did it matter whether a Mediæval hall of that type would have been vaulted or not? The sole question was whether the vaulted hall would or would not have a fine effect. Our opinion is that it has vindicated itself; that as an interior it is a very fine one, from the point of view of modern Mediævalism, from which, of course, it must be judged. Fergusson's objections, most of them, were printed as signed communications in this journal, as also some other criticisms, not remarkable for logic, signed by one or two other well-known names. We may point out to Mr. Street, who does not seem to be quite clear on this head, that for the opinions expressed in such signed communications their authors were alone responsible. They were published as the opinions of men who had earned a right to be heard on architectural questions, but not as expressions of opinion adopted by this journal. The *Builder* was responsible for a decided condemnation of the revised design of the Strand front as now executed,—an opinion very reluctantly expressed, and only under a sense of public duty; and our present impression, from many conversations with various people at different times, is, that the opinion then expressed is that now held by nineteen out of twenty of those who have any right to an opinion on architectural design. The front is lacking in coherence and nobility of effect as a whole, considering the great importance and the great opportunities of the occasion. Mr. Street seems himself to find that he cannot defend the tower, though he implies, what we have no doubt is correct, that official economy stunted the proportions and the scale of this feature.

The real merit of the Law Courts, in spite of its defects as a whole, is that, whatever else may be said, it is at all events not commonplace. That may be fully admitted. Street was never commonplace. He left the mark of his strong individuality on whatever he touched; and in nearly all that Mr. Street says about the interest of the detail in the building we fully concur. In that important test of true architectural feeling, the designing of mouldings, Street was always admirable, and moreover he designed them all himself, and did not leave them to be worked out in a perfunctory manner by assistants. We concur also in all that is said about the metal-work details of the building, also all the architect's own design. Mr. Street speaks with justifiable pride of his father's thoroughness in this respect. "I think I may say without exaggeration that there is not a single feature in the building which he did not accurately draw, not a piece of carving which he did not sketch or touch in the clay, not a single moulding of which he did not give the full size, perhaps hardly a chamfer or a splay the angle and depth of which he did not decide," and we have no doubt this is perfectly true. There is an amusingly naïve quotation from a letter of Scott's in one part of the book, in which Scott observed that Street was doing as much as he did to advance the artistic character of decorative work in connexion with architecture, though in a different way, "as he works by drawings, while I work by influence." The two ways are indeed different enough.

The completion of Bristol Cathedral by the addition of the nave, which is treated of at some length in the Memoir, was a work in regard to which there are no drawbacks or differences of opinion. It is the only instance in this country in which a modern architect has had the good fortune to be called on to complete a Mediæval cathedral, and nothing could have been better done than this has been. The ridiculous squabble which took place about the statues in the porch occupies more space in the book than it was quite worth, and we may add that the question of the insignia to be borne by the figures was debated on both sides with rather more solemnity than such a matter of quasi-historical detail deserved.

It is not very easy to make out, from the rather rambling dissertation on the affair of the St. Alban's roof, what was the precise line taken by Street in the controversy, as the account is rather confused; we gather that his wish was to see the low-pitched roof restored with open timbers for the most part, restoring three bays also of the geometrically ornamented ceiling, the importance and beauty of which were so much over-rated. The account furnishes evidence of Street's quick-sightedness in getting at the indications of the former condition of an ancient building. He, of course, knew that there must have been at one time a high-pitched roof, but he was prepared to make a restored drawing of the original roof, from discovering that a great deal of the timber had been re-used in the flat roof, and that the mortises and holes for pins in the common rafters, still visible if looked for, gave the exact position on the rafters of the collars and braces. The result of restoring the low roof would have been much better than that of the roof now carried out; but it must be admitted that many of the opponents of the high-pitched roof damaged their own cause, and gave a great handle to Lord Grimthorpe, by their absurd infatuation about the then existing timbers of the low-pitched roof. It seems almost incredible that Scott had formed a plan for separately treating every one of these old principals, which were so rotten and damaged that they were only fit to be thrown away. From some of his remarks we presume the biographer had never seen these.

Among the other subjects on which Street exercised considerable influence, and which are separately referred to, was the wild proposal for widening London Bridge by hanging iron footwalks outside the existing parapets. It is to the credit of Street's architectural perceptions that, though heart and soul a Gothic architect, he always recognised the grandeur of London Bridge, and he probably did more than any one else to save it from the addition of these excrescences, which would have simply ruined the effect of the bridge besides possibly endangering its stability. For his exertions in this respect he gained one journalistic notice which is too happily characteristic of the fatuity of the London press on subjects connected with architects and architecture to be omitted. This was from the paper which rejoices in the name of *Truth*:—

> "I trust that London Bridge will not be rendered hideous by Mr. Street's plan to widen by facing the present granite arches with iron arches. It is a monstrous scheme."

The editor of the journal which thus showed its acquaintance with architectural matters of the day is still ready to offer his advice on architecture to the Members of the House of Commons on all occasions, in season and out of season.

On two other subjects in regard to which Street's views and opinions are specially recorded, he did not show so much judgment or perception of the conditions of the subject. Mr. Street reprints a long letter written from Rome to the *Times*, at the time when the substructures of the Colosseum were laid bare, undertaking to show the meaning of these, and taking exception to the statement that these walls within the area of the arena were a more recent addition, built on the old arena floor. Mr. Street is apparently not acquainted with recent observations on the subject, or he would hardly have reprinted this letter, the views of which are quite out of date. We showed some years ago, in reviewing the late Mr. Parker's in many respects most absurd book on the Colosseum, the extreme improbability, on his own showing of the circumstances, of these walls being prior to the building of the extenal amphitheatre,—coeval with it they could not possibly be from their want of any structural relation to it; and Professor Middleton, the most acute and painstaking of recent students of Roman remains, entirely confirms this view, and states that these constructions are unquestionably of later date than the main building. Another unfortunate subject is the chapter on the idea, which Street claimed the doubtful credit of having started, as to the intentional character of the undulations of St. Mark's pavement. We should scruple to assert positively that this could not have been the case without having undertaken a special investigation on the spot with a view of settling the question; but the idea seems almost preposterous, and not less so the reasons urged in favour of it. Mr. Street might have found it worth his while to take some notice of the reasons given against it by a very well-informed correspondent in our columns, under the signature "Delta" (*Builder*, Oct. 16, 23, 30, 1886), supported by a sketch taken on the spot of some of the slabs, showing that all the depressed portions were full of cracks; but he seems to prefer not to notice anything which would assist in contradicting any opinion entertained by his father. We observe also that he reprints here a quotation in Latin which he produced some time since in the *Times*, but the origin and authorship of which he apparently does not know, prefacing the quotation merely with "we are told." Where are we told? And is Mr. Street really so simple as to suppose that there is a kind of anthoritative influence in a Latin sentence, to which people are to bow because it is in Latin, without being given any kind of date, origin, or authority for it?

Among the various subjects touched upon in the course of the memoir we observe a record of Street's almost contemptuous condemnation of the theory of presidential election at one time set up by the Institute, of election to the Presidency by rotation. Street said on this subject, "I have resigned my Vice-Presidentship because it would lead by routine to my being President, and I do not think that is the way in which the Presidentship should be conferred, if it is to be an honour." In this he was unquestionably right, and the principle has since been condemned by the Institute itself. Another matter connected with the Institute is touched on; Street's acceptance of the Gold Medal after Mr. Ruskin had refused it. This was, as Mr. Street says, an act of loyalty under the circumstances; but we must dissent entirely from his view of the position as between Mr. Ruskin and the

Institute. It was Ruskin who showed badly in the matter, and no one else. Mr. Ruskin's refusal, and the letter in which it was conveyed, were simply a display of the preposterous and ostentatious vanity which has been conspicuous throughout his career, and which apparently passes, with a number of silly people for superiority of spirit. The fact is, Mr. Ruskin, amid much that is eloquent, has written such a quantity of nonsense about architecture, that it might very well have been doubted whether he had a just claim to a medal given in connexion with the study of architecture, and his refusal to accept it was a mere spiteful act done for effect, and which discredited none but himself.

Mr. Street's remarks about his father's power as a sketcher, and his manner of work, are interesting. He says :—

"Very often I have looked over his shoulder while he did a complete sketch, and I cannot say what entire confidence he inspired with his powerful handling. A mistake seemed almost out of the question. The first few touches of the pencil, the putting in of those first lines, on the accuracy of which all may depend, showed the master hand. There was never any wavering or faltering, apparently no consideration as to the best way to put the subject on paper, or as to the scale which the size of the note-book would make necessary. All seemed to come in a flash and to be as vividly present to him as though,—imperceptibly to others,—the subject were delicately outlined on the paper before him."

It was his custom, in sketching, to make the ground plan of every church of any interest, which he contrived to get with sufficient accuracy for the purpose by stepping. It is very characteristic of him that he purposely never carried indiarubber with him, considering it as a temptation to carelessness, and the avoidance of its use as one of the best inducements towards the acquirement of habitual accuracy. Whether his habit of rapid and almost extempore design is altogether to be admired or imitated is another question. Mr. Street mentions that his father, after the site for the American Church in Paris was settled, on being asked for some slight sketch of what he proposed to do, asked for paper, and immediately made an elevation to small scale (twelfth of an inch to the foot or thereabouts), "with, apparently, no pause at all for reflection, and as fast as his hand could work," and that this design practically represents the church as it stands now. It might be replied that designing a Mediæval church, when the architect believes in nothing but Mediævalism and has Mediæval details at his finger-ends, is not, after all, an operation that calls for very much original thought ; we do not deny that it was a *tour de force*, however, but we rather question whether that is the way to design architecture which is to command permanent admiration under all changes of taste.

What is said of Street's first wife, whose acquaintance he made in the early Cornwall days, and her intense interest in her husband's work, and her assistance on his sketching expeditions, is very interesting, and also much that is said as to Street's own character apart from his professional work and reputation. Perhaps some parts of the sketch will be received with a smile among those who have not filial affection to colour their vision ; at least, if the biographer "had never heard him speak a harsh word," some of those who had worked under him, and who admired and respected him, would, we believe, tell a rather different story, and that his manner to his subordinates in the office was often marked by anything but the *suaviter in modo*. This is, however, very much matter of temperament. Street was of a very energetic highly-strung temperament, which alone, in fact, enabled him to get through the amount of work he did ; and the same temperament would naturally come out in other ways. Of his real earnestness in everything he did there is evidence in other things besides his artistic work. His High-Church principles were no mere Mediæval or æsthetic veneer, but a principle of life. The absolute incapacity shown both by himself and his biographer to perceive that there can be any other view of life than that from the High-Church standpoint is certainly amusing, and his notion that certain doctrines might be made to work their way with irresistible force into the hearts of the people if only the churches were properly built to express them in the architecture ; still more so the solemnity with which we are told of the effect of his rule as churchwarden of All Saints, Margaret-street, of which "the most striking effect was the "greatly-increased attendance of men, due to a firmness in keeping the ladies to their own seats ; which was a task so disagreeable, and for some little time apparently thankless, that it was only the exceeding strength of his convictions which enabled him to fight the battle out": a sentence in which the biographer is for once humorous, though without knowing it. But the vicar's testimony as to the increased heartiness of the church attendance in the place where he made his country home, due to his example and reverent demeanour, and the esteem in which his memory was held by the people around, can only be seriously regarded, as a testimony to the sincerity of his convictions and the consistency with which he acted on them. There has been far too much, among architects of the modern-Mediæval period, of merely æsthetic and superficial High-Churchism. Street was far too thorough a man for this. His religion and his architecture had a connexion in his mind, but it was a connexion of conviction and not of mere taste.

Mr. Street's description of his father's personal traits, his distinctly English physiognomy, and his remarkably strong physique, seeming capable of almost any amount of work and endurance, will be admitted by all who remember Street as giving a correct impression of a noteworthy personality, which at once impressed one with the idea of his being a man of power and decision. In other respects the biography must be read as that of a partisan, whose partiality may, however, be readily pardoned, as the product of filial affection ; and, apart from that, the volume is an interesting record of the professional work and personal character of a man who filled a great position in the architectural world of his day, lived a strenuous and energetic life, and left the impress of his strong hand in many a solid and lasting example of the revived Mediæval architecture of this century.

NOTES.

THOSE charitable persons who imagined that there was no call for a Royal Commission of Inquiry into the procedure of the Metropolitan Board of Works must be pleasantly undeceived by this time. The worst suspicions that were entertained before the Commission opened its investigations could hardly have equalled what the enquiry has disclosed as to the state of rampant corruption and dishonesty existing among the subordinates of the Architect's Department, compared with which Mr. Hebb's flirtations with theatre managers for seats, discreditable as they were in themselves, sink into insignificance. We had intended deferring any direct comment till the close of the inquiry, but we gather that this is a long way off, and though all who wish to follow the inquiry have seen the reports in the daily papers, we think it as well now to put on record in our own columns the heads of the inquiry, as a contribution to one chapter of the professional history of the period. The Board will dismiss Mr. Goddard,—they could not possibly do otherwise,—and it seems from the lachrymose letters of this individual which were read in court that he had come to a tardy recognition of the fact that, as Mr. Lofty says, the man who first invented honesty was a much more knowing fellow than had been supposed. Of course Mr. Vulliamy knew nothing of these performances, but it is hardly creditable to his penetration, and that of others who would have been equally incapable of lending themselves to anything dishonourable, that all this should have been going on under their noses without their ever finding it out. Then there are the architect members of the Board too, who, it is alleged, must be employed professionally in order to secure their goodwill on the Board. Mr. Villiers's whole story of the Pavilion business represents, if true, the lowest degradation of the profession, both morally and architecturally. The Council of the Institute have, we are glad to see, asked for the complete minutes of the evidence, and we have no doubt that they will take decisive action in the matter when the proper time arrives.

THE idea of founding a National Association for the Advancement of Art (an artistic "British Association," in fact), which was brought into form at a meeting at Grosvenor House on Friday last week, is a brilliant and taking one, no doubt, and it may lead to some interesting meetings, and to a useful interchange of ideas ; but we are not too sanguine as to the results. In the first place, it must be remembered that Art does not, like Science, depend for progress mainly upon investigation and discovery. At every annual meeting of the British Association science is in a different position from that which it occupied in the previous year ; new investigations have taken place, new facts been added to the stock of knowledge, and there is a new starting point. But it does not follow that there would be any analagous position in regard to annual meetings for the promotion of art, because art does not depend on the accumulation of knowledge, except in regard to materials and historic records. We must add that the appearance, among the prominent movers in the matter, of persons who belong to a certain æsthetic "ring" of critics and doctrinaires, leads to the conclusion that the movement is rather more that of a clique than in any true sense national. The first meeting of the Association is to be held in Liverpool in November, and subsequently in other provincial towns by turns.

THE most important point in the verdict of the jury on the Edgware-road fire is that there was no provision in the building against the contingency of fire, or proper exits in the event of such a calamity happening, and that the jury, "believing that the majority of buildings in the metropolis are in the same condition, would call the attention of all local authorities and the public generally to the urgent necessity which exists for providing and enforcing such special regulations as shall secure the inmates of such establishments ready means of escape in the case of fire, and ample appliances for extinguishing the same ; and, further, that all such establishments should be inspected periodically." We entirely concur in the general sense of this recommendation. We believe there are many buildings in London where many workmen or workwomen are employed, where the chances of escape of the employés in case of fire would be of the very slightest, and it is obvious that shops and factories where a number of persons are thus employed under one roof should be placed under similar regulations with theatres and places of public amusement, as regards conditions of safety against fire.

THE deputation last week, on June the 5th, to the First Lord of the Treasury, on the subject of the National Portrait Gallery, achieved little or no success. It is perfectly clear that the Government have no decided views as to a site for a new gallery, and have fixed on no period within which such gallery shall be built, nor have they come to any determination as to the amount to be spent upon it. It is thus evident that the matter has not advanced any further during the two years that the collection has been housed at Bethnal Green. The difficulty which a Government has to meet the views of those who are urging the expenditure of money, and of those who are calling for economy, are admittedly great ; at the same time, that is no reason, as it seems to us, why they should not decide on a site for a new gallery, even if it is not possible to commence building upon it. As it is, we cannot doubt that sites which might have been available during the last year or two have been lost. Northumberland-avenue has been darkened by

clubs and hotels. It would have been a fitting place for a National Portrait Gallery. It seems to us that the Trustees of the Gallery and those who are interested in the matter will do well to keep a continuous pressure on the Government, having in view two objects: firstly, to prevent the collection again being sent to South Kensington; secondly, to obtain the selection of a proper site. A National Portrait Gallery must necessarily be a progressive and increasing collection, and, therefore, ample room must be allowed for it to grow. From this point of view it would be better to wait a few years for a really suitable building than to obtain the erection of one immediately which in no long time might become too small. But there can also be no doubt that while that collection is without a home, private individuals will be very chary of adding to it. We should like to see a permanent committee of independent gentlemen formed to assist the Trustees, and to endeavour to secure the erection of a National Portrait Gallery of which this country need not be ashamed.

THE collection of Greek and terra-cotta vases now exhibited by the Burlington Fine Arts Club will have been a surprise as well as a delight to professional archæologists as well as amateurs. As regards the terra cottas, Mr. Cecil Torr has done good service by directing (*Athenæum*, May 19) the attention of visitors to the suspicious character of many of the terra cottas belonging to a class now notorious at the "Asia Minor" terra cottas. But after subtracting the suspicious numbers, plenty of beautiful and undoubtedly genuine specimens remain, notably the beautiful Castellani Nike, and the Eros of the Princess of Wales. It is, however, to the remarkable series of "signed" vases we wish to draw attention. There are in all no fewer than twenty-three, and two of these have signatures of great interest hitherto unknown. In the matter of signed vases, the honours go distinctly to Mr. Van Brantighem. Those belonging to Lord Northampton are already well known. Among Mr. Brantighem's treasures is a vase, signed, after quite a peculiar fashion, by a potter, Oikophiles, It is the earliest signed specimen of "Attic" ware known. The signature runs :—*ἐκεραμευσεν εμε οικοφιλες οικοφλεσς εμεγραφσεν*. The letters are curiously arranged inside a bead-like border pattern; the form of the signature is quite unique, and presents some very noticeable epigraphical peculiarities. Inside the cup are scenes familiar to archaic art: a satyr with a nymph, a fight with a centaur, a hare-hunt, and a sphynx. The other specially noticeable cup is signed by Xenotimos, also hitherto unknown. It is of "late fine" Attic style. Its special interest lies in the subject represented, a very rare one on vases. Leda (inscribed) gazes at an altar, on which is a large egg, a raven seems about to peck at it. There is little doubt we have here the moment of the birth of Helen from the divine egg, presided over by the sacred raven. On the other side of the altar stand Tyndareus and Clytemnæstra. We are glad to learn that an illustrated catalogue, obtainable by members, is in process of preparation, and that these and other remarkable vases are to appear in careful facsimile. It may be noted that the vase numbered 87, against the right wall of the room on entering, shows the architectural peculiarity of a column with an Ionic capital, but otherwise Doric characteristics,—no base, and flutings without fillets. This, we imagine, like similar irregularities often seen in vase representations of architecture, is probably merely carelessness or ignorance on the part of the painter of the vase, whose chief concern was with the figures.

THE Elgin Room of the British Museum, if it has lost something in symmetry, in every other respect is vastly improved by the new arrangement Mr. Murray has carried out. The seated gods of the east portion of the frieze,—for the most part, be it remembered, originals, not casts,—can now be seen conveniently both near at hand and at a distance. The large model of the Parthenon which used to obstruct the view of the matchless cavalry slabs,—again originals,—has now been cleared away to a part of the room where it is harmless. Its place is happily supplied by a seat, no unimportant matter. The casts of the Varvakeion and Lenormant statuettes are placed as they should be, side by side, for purposes of comparison. Bohn's restoration of the Acropolis is now hung up for the instruction of visitors. It is useful, but very ugly, and carries one to Munich rather than Athens. If the British public have ever pleaded inaccessibility and obscurity as an excuse for ignorance of its own art treasures, these excuses are day by day disappearing. We are specially glad to note that the cast of the Hermes has gone to its own place, the Ephesus room.

THE last number of the "American Journal of Archæology" (dated December, 1887, but which has only just appeared) contains, under the head "Correspondence," p. 389, an interesting notice of Baron Baracco's collection of ancient sculpture at Rome,—a collection difficult of access and of which little has so far been known. The owner proposes himself at some future date to issue an illustrated catalogue, and will, therefore, not allow any of the monuments to be published. The collection contains a splendid marble portrait-bust of Alexander the Great, replicas of the Discobolos, the Doryphoros, and the Diadumenos, a head, which the writer, Mr. A. L. Frothingham, says reminds him of the head of the figure known as Peitho, in the frieze of the Parthenon. Also, in the department of archaic art, the lower part of a stele, like the stele of Aristion, with a scene on the base in still lower relief. Reliefs of this Aristion style, of which several have lately been discovered, would now make a goodly series. Last, there is a head in the style of the Ægina marbles. The collection is honourably distinguished by the fact that it contains no rubbish; each piece is really fine work and well preserved.

IN the same number there is also a very interesting article by Professor Merriam on "Greek Inscriptions published in 1886-1887." Two of these are as notable from the point of view of architecture as of epigraphy. One found at Eleusis contains a statement concerning part of the contract for the construction of a large building within the sacred precinct. The stone employed was from Ægina, from the Peiræan Akte, from Eleusis, but also in large quantities from Pentelicus. Stipulation is made that it be delivered within the precinct in good condition, of white colour, without blemish of any kind. The number and dimensions of the blocks are exactly specified. By a curious stipulation each contractor is to supply his own material, but the iron and lead for fastening the blocks is to be supplied by the State. The second inscription records the contract for building the Temple of Asklepios at Epidaurus. This contains no details as to the character of the stone, but states the lump sums paid to contractors for executing various parts of the building. These are seldom round numbers, from which Professor Merriam thinks probably the lowest estimate got the award. The contractors are mostly foreigners. Thus Loukios the Corinthian quarries and transports the material for the stoa for 6,300 drachmæ, Polemarchos the Stymphalian paints the stoa by an encaustic process for 1,050 drachmæ. It is noticeable that the sculptures of one pediment cost 3,010, the other only 1,400. As excavations have laid bare the ground-plan of the temple, and many of its architectural details, Professor Merriam's account of the inscription becomes very interesting reading.

DEVIZES CASTLE Estate, which was in the market just two years ago, will again be put up for sale at auction, by order of the late Mr. R. Valentine Leach's executors, on August 21. Mr. Leach had made some additions to a castellated building which covers a portion of the site of the ancient fortress. Of this latter considerable ruins yet remain. Situated upon a lofty hill, in the Hundred of Cannings and Potterne, the borough of Devizes is considered to be identical with the Kanningham of the eleventh century. Dr. Guest has derived its name from the *Ad Divisas*, or *Divisæ*, on the frontier line between the British and the English. The Empress Matilda, daughter of Henry I., is said to have given their first charter to the burgesses, who returned two members to Edward I.'s writ of 1295. South-west of the town already was standing the most formidable fortress in the realm. Its foundation and design are attributed to Roger, Bishop of Salisbury, *temp.* Henry I. That prelate, perhaps, built in emulation of his contemporary Alexander, "the magnificent," Bishop of Lincoln, at Sleaford, and at Newark-on-Trent. The possession of so important a stronghold was strenuously contested during the Civil War of King Stephen's reign. Nigel, Bishop of Ely, a nephew to Roger, held it for awhile against the king, but was forced to yield to William de Ypres, when a treasure of 40,000 marks was discovered (1139). On the defeat and capture of Stephen, two years later, on Lincoln Plain, without Newport-gate, by Robert, Earl of Gloucester, Devizes surrendered to Matilda, who in her turn was next besieged at Winchester, by the king's brother, Henry, Bishop of that city. Matilda made good her escape from Winchester to Devizes, and thence, concealed in a bier, to Gloucester. In September, 1645, Devizes Castle and garrison, under Sir Charles Lloyd, governor, capitulated before Fairfax, in his reduction of the west country after Naseby. Cromwell ordered the fortifications to be levelled, and the castle to be destroyed. It is reputed to have been originally dismantled in Henry VII.'s reign. Leland, who was in this part of England in the autumn of 1539, says of Devizes in his "Itinerary,"—"The keep, or donjon of it, set upon a hill cast by hand, is a piece of work of incredible cost. There appear in the gate of it six or seven places for portcullisses, and much goodly building was in it. It is now a ruin, and part of the front of the towers of the gate of the keep, and of the chapel in it, were carried full unprofitably to the building of Master Bayntan's house, at Bromham, scant three miles off." The existing property is about 120 acres in extent. The purchaser will have the option of buying the furniture, pictures, stock, &c., together with the collection of old pottery, bronzes, implements, weapons, and relics that have been found amongst and about the ruins.

THE case of Whiteley *v.* Barley, which has just been decided by the Court of Appeal, again illustrates the efficacy of Section 193 of the Public Health Act of 1875. The action was one to recover penalties from the Surveyor of the Corporation of Ramsgate for being interested in certain contracts made by that Corporation. Mr. Justice Mathew had decided against the defendant, and the Court of Appeal has confirmed that decision. In doing so, it expressly stated that there was no impeachment of the honour or integrity of the defendant, whose case, as we have already observed, seems a hard one; but as the law stands it is obvious that no other decision could be arrived at.

THE finding of the jury in the case of "Butler *v.* Goundry," in which Mr. Justice Mathew, before whom the case was tried, expressed his entire concurrence, is not encouraging for those who would hope to see the law taking the side of sanitation and discouraging the lightheartedness of the landlords of insanitary dwellings. The plaintiff brought the action to recover damages on account of the defendant having "recklessly misrepresented" to him that the drains at 148, Brompton-road, were in perfect order, defendant having let the house to plaintiff. The main defence was that the defendant, who is the minister of a Congregational chapel in the neighbourhood, but evidently unacquainted with "the gospel of sanitation," had told the plaintiff that the house was drained by an old-fashioned brick drain, and that it was in as good order as that kind of drain could be expected to be. It appears from the evidence, however, that Mr. Goundry's examination of the drain consisted

in employing a carpenter, who "sometimes did building jobs," to open about 2 ft. of the drain and to flush it with 1,000 gallons of water, but without ascertaining where the water went to. On the plaintiff, on account of the smells in the house, calling in the sanitary inspector, it was discovered that the only drainage was through an *open* brick drain under the kitchen floor, which had no connexion with the sewer, and that, being choked, the sewage all overflowed under the basement of the house. We can hardly imagine a state of things more dangerous, or more discreditable to a landlord. The Inspector stated in his evidence that the house was about two hundred years old, and that, in his opinion, the brick drain had never been repaired since it was built. The Vestry, on the report of the Inspector, compelled the plaintiff to lay down proper drains, and the defendant refused to refund the cost of these. As the result of the combined wisdom of Mr. Justice Mathew and a common jury, the unfortunate plaintiff, after being first poisoned by the rev. gentleman's sewage-trap, has had the pleasure of setting right the drains at his own cost, and the further privilege of paying costs in an action brought against his landlord. This is truly a delightful example of the dictum that "the law is always on the side of landlords." If it is imagined that a landlord is to be held scot-free for having turned a tenant into such a house as that, merely on the plea that he had opened a drain 2 ft. and poured some water down it, we can only say that the sooner judges are made to undergo a test examination in sanitary knowledge the better. We have no doubt the jury imagined they were doing justice; but in a common-sense and sanitarian point of view, the decision seems to us little short of scandalous.

IT appears that the truth of a report to which we referred the other day, to the effect that the selected competitor for the New Baths and Wash-houses for St. George's, Hanover-square, had entertained some of the Committee at dinner before the award was made, has been indignantly denied at a meeting of the Vestry since. We are glad to hear it; but there are some other things that have not been explained. It has been publicly stated that the design selected is not that recommended by the assessor; that the Vestry refused to publish the assessor's report; that they promised to exhibit all the designs, but withdrew the selected design from exhibition; and we have never seen any of this contradicted. When a competition committee intend to have a *bonâ-fide* exhibition of the designs sent in, so as to expose them to public criticism, we usually receive notice of the fact of such exhibition; but no notice was sent to us, and no *bonâ-fide* exhibition, as far as we have been able to ascertain, has taken place. Whatever may be the reason for this kind of action, it is not the way to create a feeling of confidence as to the proceedings of the committee of selection.

ARCHITECTURE AT THE ROYAL ACADEMY.—VII.

1856, "Church of St. John the Divine, Gainsborough, South Elevation"; Messrs. Somers Clarke and J. T. Micklethwaite. This is a church of which the west elevation was published in the *Builder* for June 28, 1884. There is no plan, and it is not very easy to judge of it, apart from this, from a single elevation. It is apparently a very large church, in pure Gothic style (Late Decorated), with a large square western tower of somewhat the Somersetshire type, richly finished with pinnacles and a battlemented parapet and wall arcading, and two large traceried windows in the upper stage; the lower portion of the tower shows great masses of plain wall and buttresses. There is a long range of clearstory windows beneath a battlemented parapet, the tracery design the same all along; some variation would have been better than this mere repetition. The line of windows is only broken by an octagonal turret, which, with a *flêche* on the roof, alone marks the break between nave and chancel. The parsonage and schools form a group of small buildings completely dwarfed by the church, the apparent scale of which they serve to increase, though in the elevation they look rather an excrescence; they may produce a different effect when seen grouped in perspective. The church is a fine massive piece of modern Gothic, showing a true feeling for the style, though totally without originality in *motif* or detail.

1854, "Design for Stained Glass: Introduction of Christianity into Britain"; Messrs. W. G. Taylor and W. J. Griffiths. Having regard to such disclosures as those of the sweating system inquiry and the Board of Works inquiry, one might ask whether the subject of the "Introduction of Christianity into Britain" was intended to be treated as history or as prophecy. From the columns of the figures in the small predella scenes, however, we may presume that it is history, or what is supposed to be so, that is recorded. Above are figures of saints and abbots in four compartments, under canopies, which latter are treated with commendable flatness and conventionalism of detail, instead of being, as is too often the case, realistically architectural. The general colour effect is harmonious, and the design of the draperies bold and broad; but the filling up of the small lights in the tracery head of the window is very commonplace, besides being out of scale with the other Decorative details, and spoils an otherwise good window. If the work is not yet executed, this upper portion of the design should be reconsidered.

1855, "Design for Liverpool Cathedral: Interior View"; Mr. W. Emerson. This is a fine perspective, drawn very cleanly and precisely in line and then coloured over in the most finished architectural draughtman's fashion. Our impression is that this is a drawing made since the competition, and in which the detail is a good deal modified from its original form; at least, it strikes us as much more like pure Gothic (of a French type) than the design as we remember it in the competition drawings. The peculiar treatment of the domical vaulting over the crossing is very well shown (the view is looking east from the nave). The general effect of the architecture is somewhat "Burgesque," solid and powerful; but the large and massive character of some of the detail,—the semi-shafts of the piers, and the vaulting-shafts and their bands, &c.,—give it a rather coarse appearance, and, moreover, tend to lessen the apparent scale.

1857, "Stables, New York: North-west View," and 1858, View of the Interior of the Courtyard of the same, by Mr. Peter Dollar, appear to be creditable attempts to do something picturesque with stable buildings, but they are hung rather too high to judge well of details or to see the plan which is appended.

1860, "A London Street Front"; Mr. C. J. Mallows. We presume this is an imaginary and not an executed design; it is a very good coloured elevation, treated with a good deal of originality; the most noteworthy point in it is that the designer, in employing in the ground-floor the arrangement, so common now, of a large circular-headed arch for the shop-window, and a small arch at its side for the door, has contrived to connect this arrangement satisfactorily with the superstructure, the brackets which carry the first and third of the four pilasters above being arranged so as to seat on the keystones of the two arches; thus the whole construction and design are connected; too often (as in other drawings in this same room) the superstructure is merely built over the two unequal arches in a lobsided fashion, looking equally bad whether as construction or as design. The front is apparently in red brick, with white stone for the more important portions, brick and stone being arranged in alternate bands on some of the piers and arches. The three plain brackets under the outer balconies on the second floor have rather a mean appearance, seen edgeways, and seem out of keeping with some of the other detail; but as a whole, this is a clever and suitable design for its purpose.

1862, "Oak Room, New River Company"; Mr. John Crowther. This is, from an architectural point of view, a perfect little water-colour drawing of the interior of the Classic room, with an exceedingly rich ceiling with plaster decorations and a painting in the centre, and a richly-carved over-mantel flanked by Corinthian columns. All the details of furniture, Turkey carpet, ceiling enrichments, &c., are finished with the most conscientious care; the lighting of the room is cleverly treated, giving sufficient of atmospheric effect without obscuring details, which it is the principal object of the drawing to show. As a specimen of architectural illustration in water colour this little drawing is quite a gem.

1863, "Design for the Municipal Buildings, Edinburgh: North Front"; Mr. John M. Brydon. This is the elevation of Mr. Brydon's competition design, which we published in the *Builder* for June 18, 1887. The lofty elevation rising from the low level is treated with a great deal of power and character, the upper story only being decorated with an order, the portion below being treated in a simple and massive manner, and depending chiefly on rustication for its effect. Perhaps an even greater simplicity and unity, instead of the use of two or three different species of rustication, would have given an even more forcible effect; but there is a great deal of effect and originality in the design as it is.

1864, "Park Mansions, South-West View"; Mr. Basil Champneys. A pen-drawing showing the touch of a well-known draughtsman. The best point in the design is the effect produced by the lofty mass of blank wall near the angle, contrasting with the windowed and pilastered expanses adjoining. The little turrets between the gables, with the copings returned upwards in a curve to meet them, have also a piquant effect, though they would be better without the spikes on the top; with this exception, the details seem all *rococo* of the now fashionable type.

1865, "Design for Drawing-room and Organ-chamber," and 1866, Ceiling of the same; Mr. W. F. Randall. This is a rich and fine design in dark warm tones, the basis being a dark red wood moulded and carved, and inlaid (apparently) with lighter woods. The details are of Renaissance character; on either side of the fireplace are copies of the seated figures from Michelangelo's Medici tomb, whether in inlay or sculpture is not very clear from the drawing, probably the latter. The small chamber-organ occupies a recess to the right of the fireplace; the design for the case, with the pipes showing, is treated with considerable originality; above is a painted subject on the wall of the recess. A mullioned window on the other side is prettily treated in the glazing. On either hand of the design a warm yellowish paper with arabesques harmonises well with the woodwork. The ceiling is treated with massive moulded wooden ribs with gilt enrichments between the mouldings, and the panels filled in with warm tinted designs harmonising with the walls. The whole is rich in effect, and shown in a finely executed drawing.

1869, "Ufford Font, Suffolk"; Mr. Henry P. Adams. This is an apparently carefully executed geometrical drawing of the font and its rich and lofty spire-like cover, with plans of each stage appended; it looks like a very painstaking piece of illustrative drawing, but is hung too high for the detail to be properly seen.

1870, 1871, "Dairy Farms on the Eaton Estate of the Duke of Westminster"; Messrs. Douglas & Fordham. Two pretty and picturesque groups of farm buildings.

1872, "Interior of a Deserted Sicilian Church"; Mr. J. A. Slater. An interesting coloured sketch of what has once been a very rich interior of a semi-Byzantine type, with coloured marble columns, inlaid marble floor, and the spandrels of arches and the dome over filled with mosaic pictures and decorations on a gold ground. The treatment of the soffits of the arches, with foliated circular panels with geometrical flower forms within them, is peculiar and pretty. The effect of the whole is well shown in the sketch.

1873, "New Church, Bothenhampton, Dorsetshire"; Mr. E. S. Prior. A very peculiar little drawing, in pen and ink on dark grey paper, touched here and there with white, perhaps owing its position to its peculiar effect, for there is nothing very much in the architectural design, which shows the interior of a small chancel of Gothic style, with nothing special to note in it.

1875, "Design for a Railway Terminus," by Mr. W. H. Boney; and 1876, design for the same purpose, by Mr. William Leck. Two students' designs: of No. 1876 we published a portion of the drawings, but not this perspective, owing to some difficulty arising out of the partial tinting of portions of it. We commented on it at the time the students'

designs were exhibited. No. 1875 shows a frank treatment of the end of the iron and glass roof of the station, marked by no architectural screenwork, but abutting against the solid portions of the two angle towers which form buttresses to it, and the upper portions of which are treated as rather pretty Classic lantern designs. The low buildings in front, forming the entries and offices, do not fit on very well to the main design. Plans of the front part of both designs are appended.

1878, "The Flagellation of Christ"; Mr. Percy C. H. Bacon. We presume this coloured drawing is intended as a stained-glass window design, though it is not stated so; it is well composed, and shows a group of figures under a Renaissance arch or canopy of rather florid design; but the whole thing is far too pictorial for stained glass, showing as it does an interior and a crowd of figures receding in perspective; and the whole design, both in its brilliant colour and the vulgar rococo details of the architectural adjuncts, is almost painfully out of harmony with the event it illustrates; it is a clever design wholly destitute of feeling.

MACHINERY AT THE GLASGOW EXHIBITION.

THE section devoted to Machinery and Mechanics, and to the various fittings and appliances employed in the construction and working of machinery and the heavier mechanics, is by far the largest of the rather imposing gathering of sections now on view within the industrial capital of Scotland. It is, perhaps, even more than this. Were the Exhibition measured by the machinery feature alone, and gauged simply in respect of the gross quantity of machinery and machinery appliances shown, it would probably be adjudged the palm over all other exhibitions. Of exhibits and grouped exhibits within this class there are, according to the sometimes rather uncertain tabulation of the official catalogue, close upon 500 in all, while it is to be borne in mind that many of these are extraordinarily populous in individual items, with cases in which, under one single stall number, the grouped exhibit subdivides itself into many hundreds of items. The housing of the machinery section has been conceived and carried through on a fairly liberal plan. It is mainly comprised within Division A, at the extreme west of the building, with, in all, and including accessory machinery spaces adjoining, nearly 200,000 square feet of flooring. This great area, which is of square form generally, is traversed longitudinally, or from east to west, by an extension or projection of the principal avenue of the main erection, and crossed from north to south by nine gangways dividing the various ranges of exhibits. These gangways are all roomy, but the central one is markedly so, both as to breadth and height, to accommodate a travelling crane of a 20-ton capacity, which is there in the dual *rôle* of exhibit and exhibition plant. A raised gallery, with accommodation for one single lining of stalls, flanks the east, south, and west walls; and immediately to the west of the building, and openly connected therewith, are the steam boiler shed and the dynamo house, furnishing in themselves a show well worthy of the closest attention. Of striking and unquestionable novelty in this machinery department there is really no great array, but still there are a few objects which are new, or only recently introduced. Of old style types there are decidedly too many specimens from the examiner's point of view; but the exhibitors of these have a direct eye to business rather than to fame, and they are on the ground purely as a matter of business. Some of these types are of intrinsic worth, and, indeed, that they are truly hard to beat is proved by the length of time they have held the field; but being already thoroughly well known and substantially recognised, obtrusive mention may be spared. The fact is that exhibitions, especially those on the largest scale, appear more and more to slide into the province or function of mere advertising mediums, where every enterprising producer must be on show with his wares whether there be anything novel in them or not. In this place only instances of special novelty or worth, whether in design or in material, need be singled out for mention in anything like detail.

It will not be unfitting to begin these notes with the boiler department, already alluded to, which is the source of most of the mechanical power displayed in actual force throughout the building, and the first source also of the electric illuminations nightly seen under various guises, including that brilliant and elaborate effect in the grounds, the "Fairy Fountain." Gas is a mover of machinery to a limited extent, but to steam still falls the lion's share of the work. The boiler-house, which adjoins the extreme western boundary-wall of the main building, gives cover to nine Lancashire boilers of steel, firmly embedded in one conjoint setting of brickwork, each boiler 28 ft. long by a diameter of 7 ft. 6 in., and with a steam resisting capacity of 100 lb. to the square inch. They are all of a workmanship creditable to the five makers (three of Glasgow, one Manchester, and one Leith) who have supplied them, but they present few points of novelty. One is fitted with Redgate's patent triplex firebars and a new smoke consumer, and on another Proctor's furnace-feeding patent is seen in operation; but with these exceptions there is here offered nothing not already perfectly well known to ordinary users of the "Lancashire" type of boiler. A good notion of the extent of steam power at work is obtained from a general survey of this boiler-shed, and although in thorough working garb, and not decked out at all, the sight, to the intelligent onlooker, is a most suggestive one. In the office of distributing steam from these nine boilers, piping to the extent of nearly 2,500 ft. is employed, with a diameter range of from 15 in. down to about the smallest steam tube in use. Of shafting for the conveyance of power from the driving-engines to the various machines, there is a total length of close upon 1,500 ft. The engines which set this shafting in motion are four in number, variously distributed over the floor of the machinery space, These present some points worth noting. Most prominent of all in the central portion of the court is the fine driving-engine of Mirlees, Watson, & Co., Glasgow, horizontal in type, and working with automatic cut-off gear. This is an excellent sample of constructive engineering, well proportioned, complete, serviceable, and yet simple of design. Alley & Maclellan, Glasgow, for the same work, supply two engines of the Westinghouse automatic pattern, whose well-known speciality is an extra regularity of power delivery, making it a favourite for services wherein this quality is in particular request, a high degree of steadiness and uniformity of performance being obtained through the automatic action of a single balanced valve, coupled with other valuable features. So carefully are these machines put together, and so well does the self-acting governor do its appointed work, that a speed, it is said, of over 1,000 revolutions per minute may, in the small sizes, be ventured upon without entailing more than a minimum of vibration. John Cochrane & Co., Barrhead, are the builders and owners of the fourth driving-engine, of 100-horse-power, fitted with Corliss valve gearing of a recent type, and, like that of Mirlees, Watson, & Co., on the horizontal principle. The Corliss valve gearing is a great advance upon the older slide-valve contrivance, and largely does away with the admitted drawbacks of the latter. In the usual Corliss mode, the cylinder is furnished with two valved steam entrances and two exhausts, and so it is here also, but the difference lies in the working or manipulation of these, which is done in a way greatly simplified from the original Corliss manner of rods and disc. Altogether the engine is an interesting specimen of its class, and while at work attracts much of the attention of experts.

Before passing on to the general exhibits, notice must be taken of the engineering plant employed in the supply of electric illumination to the building. This, as already passingly hinted, is compactly housed in a western extension of the machinery section on which it opens, with a raised gallery of its own from which engines and dynamos may be surveyed and the adjoining boiler-house at the same time overlooked. It is here we have grouped the largest show of prime-movers, these acting directly on the dynamos, and more particularly employed in the after part of the day. Robey & Co., Lincoln, are the largest contributors to the dynamo section, having on the ground by this time no fewer than seven of their engines, on a variety of designs. Their heaviest example is a coupled compound engine of 320-horse power worked on the patent triple-expansion gearing of Richardson & Rowlands, a recently-introduced method for which high things are claimed by those interested, including greater saving in coal, increased steadiness of action, and equal suitability for dynamo charging or ordinary factory work. Another compound engine of theirs, of 150-horse power, and fitted with automatic governor and cut-off gear, has for special feature a bed-plate of uncommon strength and solidity in order that it may be laid down anywhere, almost independently of any foundation in brick or stone work,—a recommendation no doubt under certain circumstances, but also under an opposite set of circumstances something of an encumbrance. The rest of the Robey engines are commendable examples of the engineering craft as regards workmanship, but they do not offer any feature of special novelty. Adamson & Co., Manchester, furnish an engine (single) which is notable as being the first fitted with the Wheelock automatic valve gear, quite a new contrivance, claiming chiefly the effective attainment of all the good ends of earlier patent valve gear by methods simpler and better. A compound engine (horizontal) of 300 horse-power indicated, by Smith & Co., Glasgow, adheres to the Corliss valve gear, with, however, certain recent improvements. The other dynamo drivers comprise two Westinghouse engines of similar equipment to the pair already noticed as employed in the general driving, but of more powerful capacity; also a small horizontal, patent-geared engine by Greenwood & Bately, Leeds. Altogether the large muster of effective engineering power found within the dynamo-room does credit to the various makers concerned.

Some of the heaviest exhibits of the section are on the extended line of the main avenue, particularly noticeable just on entering from the direction of the dome being that of the Steel Company of Scotland, built up into a kind of rough-and-ready temple of steel, the component parts of which enter into every department of machinery construction. Steel as a substitute for iron has made great advances of late in Scotland, as elsewhere, and no little evidence of the fundamental change thus going on is found here. Samples of steel plate, dinted but not fractured, after sustaining the assault of a dynamite discharge, attest the extreme degree of toughness attainable in the manufacture, and prove most interesting objects for examination. Hallside steels of boiler-plate quality, of firebox and special purpose application, and of highest quality, are found here in contiguous samples for handy comparison, together with ship, bridge, angle, pipe, and other steels. On the same line a huge propeller-shaft of steel, by John Brown & Co., Sheffield, inevitably arrests attention. This monster, which in its temporary lodgment rests daintily on a linoleum-covered pedestal a foot or so higher than the floor, seems a magnificent specimen of steel forging on a large scale, being quite 60 ft. in length and weighing close upon thirty tons. There are also some samples of crank shafts on stands in the vicinity, notably two of fourteen and seventeen tons respectively, by W. Beardmore & Co., Glasgow, who also show a propeller-shaft of hollow steel which will repay examination. Indeed, exhibits of like kind are fairly numerous, and amongst them also a few large-sized, deceitfully-painted, wooden patterns of heavy crank shafting, an offence from which, perhaps, we might have been spared, considering that room for honest solid workmanship was so much in demand. Of boiler and furnace metal in detached samples there is, possibly, rather too plentiful a supply, with little temptation towards special remark, but mention may be made of the selections of the Leeds Forge Company, in flue and boiler steel, &c., comprising the newest of the Fox patents, which are the property of this concern. Also, while what may be called the crude material of constructive engineering is in hand, passing allusion may be made to the show of pipe and tube work, which is a very large one, Glasgow being the centre of a most extensive and still growing manufacture in this walk, and the locality whence a large portion of the world's needs is supplied. There are some excellent specimens, but for goods offering so restricted an outlet in way of variety a smaller aggregate bulk might well have sufficed. Having thus dealt with the more noteworthy of what may be called the "atomical" engineering specimens, the way is cleared for some remarks upon general samples of machinery and mechanics in the fully "articulated" state.

The variety of these, from the powerful steam-engine and complicated lace-making machine down to the simple tool in less than half a dozen parts, is very great, and many of the samples are commonplace enough, although merit is certainly to be singled out here and there.

Conspicuous by its absence is the railway locomotive, and that might at first glance be thought rather surprising, locomotive building being largely carried on in Glasgow; but on a second thought the circumstance is, perhaps, not to be wondered at or regretted. In the popular eye few out-of-door objects are more familiar now-a-days than the locomotive, and to the technical expert opportunities of examination in action are procurable at any time. But if no fitted locomotive be present, specimens of parts are comparatively plentiful, forming a portion of that department of grouped exhibits just dealt with. Also, at first sight, it is somewhat of a surprise to find that here, within little more than one-third of a mile from the Clyde itself, there is only one full-sized working example of the marine motor, this consisting of a combined set of screw-propeller engines recently turned out of a Govan factory. Nor are these of any size to speak of, or representative in any way, except in principle of construction, of the prime motors applied to the propulsion of steam-ships of the largest class, the indicated horse-power being 400 only, and therefore as things go no more than moderately respectable. They are good examples, however, of the triple expansion surface condensing screw-propeller type, of late years so extensively in use. Cylinders (inverted, direct-acting) are severally 12 in., 19 in., and 32 in. in diameter, with a 24-in. stroke of piston. Their chief novelty consists in the arrangement of the valve gear (Bremme's patent, operating on slide valves with a front position) for reversing and varying expansion, an arrangement which seems to conduce to further regularity of action. The same makers show a patent propeller, and a pair of expansive valve reversing screw-launch engines, the latter utilised to give an easy and illustrative, but, of course, quite abnormal, motion to the larger marine engines above described. Complete models of marine engines of large size are shown here and there as a compensation for the scarcity of the genuine article. J. & J. Thomson, for instance, thus illustrate engines of 3,500 I.H.P. (indicated horse power), compound type, as supplied to various ocean racers. The Fairfield Co., Lim. (late Elder & Co.), also show a working-model of triple-expansion engines, 7,500 I.H.P., supplied to several of the North German Lloyd Atlantic steamers, these, it may be remarked, being the first of the triple-expansion type ever fitted into any of the New York liners. There are other specimens, but the only added instance to be dealt with here is a model by Wm. Denny & Bros., Dumbarton, of quadruple-expansion engines (the only example of the sort present), made and supplied by them to the *Buenos Aires*, under a patent the property of a partner of the firm. This form of engine is an advance upon the triple-expansion principle, which, although comparatively new in actual years, and with a record of splendid service performed, is thus already threatened with relegation to the "out-of-date" category by a go-ahead engineering age. Diameters of the four cylinders which here figure in miniature are 32 in., 46½ in., 64½ in., and 92 in. respectively; stroke, 5 ft., I.H.P. 4,300, and working pressure 180 lb. to the square inch. And now, coming to miscellaneous items, of which only a few are to be noticed, there is a word to be said first on the show of pumping machinery. The improved duplex pumps (vertical and horizontal) of S. Owen & Co., London, and the same makers' direct-acting steam pumps (on Blake's patent) are good examples of their kind. A steam pile-driver (Lacour's) and some earth-drilling tools, as shown by them, are also worthy of examination. Pulsometer steam-pumps, by the Pulsometer Engineering Company, Nine Elms, make a very conspicuous stand towards the north-west corner of the section, the largest sample possessing a throwing capacity of 52,000 gallons hourly; here also are shown a centrifugal pumping engine, and several of the Deane pumps,—vertical double-plunger, sinking, general-service, and duplex. Tangyes, Birmingham, show excellent specimens of their duplex and centifrugal pumps, the latter driven by an 8 in. vertical Archer engine. Their chief item, however, is a horizontal engine with patent automatic cut-off gear, and they show in addition a vertical drilling-machine, and a gas hammer. Gas power samples are elsewhere numerous, especially in Court B, where Crossley Bros. (the Otto), Andrew & Co. (the Stockport), the Glasgow Gas Engine Company, and others, make quite a large show; new features of merit, however, are not abundant. Some pulverisers, and ore and stone breakers, in the Main Court (A), and also outside, are a good deal looked at. The centrifrugal pulveriser of Askham Bros. and Wilson, Sheffield, for treating limestone, cement, basic slag, phosphates, gold quartz, &c., seems a powerful tool, and as much may be said of the "Stag" ore-crusher by the same makers. Another Sheffield factory (the Hardy Patent Pick Company) show, out in the grounds, their "Devil" disintegrator and mixer. The largest size of this Satanically-named instrument is said to be able to give a good account of about seven tons of lead ore after one hour of steady crushing. An interesting show also is that of the Anti-Friction Conveyor and Grinding Machinery Company, London. The conveyor for carrying ores, coal, and cement, is shown at work, the principle being that of a spiral flange revolving inside a long and narrow case, in an inclined position, and in so revolving carrying the loose contents of the case from a low level to a higher one. They also show grinders and separators in some variety. On the adjoining stand there is a good example of the Blackman Air-propeller for ventilating, cooling, and drying. This has a diameter of 4 ft., and is fitted with shutters, which close automatically, and exclude the air whenever the machine comes to a stop. It is seen in motion. A few of the machinery exhibits take the form of working factories. The Broxburn Oil Company, at a large stand in the middle of the section, illustrate the manufacture of candles from paraffin wax, which is one of the products of the crude oil got from the now well-known Scotch shale strata. The method is a combination of moulds, mechanical contrivances, and manual dexterity, and the small factory in operation, as a sight, is one of the best patronised in the section. Practical illustrations of the ordinary bakery and sugar-bakery industries are also on exhibition, likewise various other crafts in a smaller way of business, such as the hat-making trade for example. There is also a working dairy on a considerable scale. Looms at work are to be seen at several points, the most interesting of these being a lace-making machine by Luke & Wigley, of Nottingham, placed on exhibit and worked by the owners, Hood, Morton, & Co., Ayrshire. Practical printing, bookbinding, and allied trade operations are in strong force numerically, the machines connected therewith occupying nearly the whole of the first row of the section (to the right on entering from the main avenue), but we find here nothing strikingly new. There is a rather obscure department devoted to what may be called the antiquarian side of Scotch engineering, and a reference to it will close the present instalment of notes. This consists of the remains of three ancient engines much spoken of in local tradition, but regarding whose actual antecedents considerable doubt exists in some sceptical minds. One of these is a side-lever engine said to have driven the *Comet* steamboat on the Clyde about seventy years ago; another is that of the *Industry*, a small craft hardly the size of the smallest tug-boat, which, after carrying cargo on the Clyde for half a century, now lies rotting on the beach at Bowling; and the third is a land-engine of very early type, which, according to some, dates back even into last century. These curiosities are to be seen out in the open, between the building and the Kelvin, and they should certainly be looked at.

The Jubilee Clock Tower, Gravesend.—The large clock was formally started on June 4th by the Mayor, in the presence of a large concourse of people. The clock is from the works of Messrs. John Smith & Sons, Derby, who have carried out the designs of Lord Grimthorpe. There are four dials, each 5 ft. 6 in. across, the hours are struck upon an 11 cwt. bell, and arrangements are made that quarter chimes may be added. It has a gravity escapement with a compensated pendulum of 3 cwt. As the tower is in a central position, the clock will be a great boon to the inhabitants.

OLD LONDON BRIDGE; AND CLAUDE DE JONGH'S PAINTING OF 1630.

AMONGST the Marquess of Exeter's pictures which were sold on Saturday, June 9th, at Christie's auction-rooms, was a very remarkable view, taken from the north-western foreshore, of Old London Bridge. The painting,—highly elaborated and carefully finished,—measures 20 in. by 66 in. It is signed by Claude de Jongh, and dated 1630.* According to a very brief notice in Immerzeel's Dutch Dictionary of Lives and Works of Painters, &c., Amsterdam, 1842, De Jongh was received in 1627 into the Schilders Collegie, at Utrecht, and in 1638 painted a landscape in the St. Hiob's gasthuis (or inn) there. The date alone of his painting of Old London Bridge should arrest attention. But far beyond this, the picture is a remarkable one. Certain leading features therein depicted are strikingly at variance with the commonly received details of Peter de St. Mary Colechurch's structure as it appeared in 1630. Avoiding controversy as much as possible, we will set forth what these material differences are. In the first place, De Jongh shows a complete series of *rounded*, slightly elliptical, arches; each with a massive, but almost flat, voussoir. The buildings that project from either side of the river partially conceal the two end arches. These counted, the arches are *nineteen* in number. The tenth, or central, arch is larger than the rest: its diameter being very nearly that of a five-shilling piece. The remaining eighteen arches are all alike, having a diameter just corresponding with that of a bronze penny-piece. The central arch rises above the level of the others; and three or four of its crowning key-stones are taken out to admit of the passage of vessels with standing rigging. Across this arch is laid a platform, one of its lifting halliards hanging loosely from a large building (whereof presently) next northwards of the drawlock. No other drawbridge is shown. A lofty tower may appertain to the waterworks, which in 1582 were set up at the bridge's northern end, on the western side, by Peter Corbis (or Morice), and were not finally removed until 1822. The tide is gently ebbing, and, though it is manifestly almost low water, no starlings appear. The piers, together with the locks, are delineated as being protected by rows of piles that rise to some height above the water. The houses, for the most part wooden, present the three gaps; the central gap with iron palissadoes was known as the Square; with which we are familiar. The northern block was destroyed by fire in 1632, and the vacant space thus left, though subsequently built over, is clearly marked in Hollar's view of 1647. De Jongh depicts no building that can be identified with St. Thomas's Chapel, which we know stood over and in the eastern portion of the pier between the Long Entry or Narrow Passage, and the Chapel locks, eleventh and twelfth, from Surrey side.† According to the view of the Bridge, *circa* 1600, by Mr. H. W. Brewer, which we published on May 10, 1884, the chapel's western end, being in alignment with the bridge's eastern wall, had a clear roadway before it. In the painting under review this space is occupied by houses. The large dark-grey coloured building, with squared corner towers, that stands next northwards of the big central arch, we take for Nonesuch House. But, by all accounts, Nonesuch House, built in Elizabeth's time, stood further south, over the seventh pier and seventh arch from Surrey side, and was separated by a drawbridge, over the "Draw-lock," from the southern block of houses. Our artist gives no indication of that other large building, highly ornamented and, like to Nonesuch built entirely of wood, to which we refer in our article "Old London Bridge and its Approaches," of May 10, 1884, as having been begun in 1577, and as probably serving the same purposes as does the present Bridge House office. De Jongh places his traitors' heads over a house which is next south of his central arch. These objects are generally stated to have been exposed at this time, above the Southwark Gate, at the bridge foot.

At the south-western end of the bridge is painted a high perpendicular grass-covered bank. On this stands a large house carrying

* The date "1639" of the catalogue is wrong. Bought for 525*l.* (Agnews). A similar work, bought for 500 guineas at the Wynn Ellis Sale, and since sold for 750 guineas, was amongst the Ellis bequest, offered to the National Gallery.

† See Dance's measured drawings, dated "Guildhall Offices, 2nd July, 1799.

conspicuously a bell for its sign. Some flights of wooden steps lead down to the water. Though the field of view fully admits of it, St. Mary Overeye's Church is not drawn; St. Olave's tower, with a turret, rises in the distance. Through the locks are seen the green flats and meadows about Bermondsey, Jacob's Island, and Rotherhithe. To the spectator's left, stands the White Tower, placed, according to the perspective, somewhere near to Holy Trinity, Minories. Its four turrets rise to a quite novel altitude above the battlements; and against its western wall is another circular tower, half engaged, with a cupola just overtopping the battlements. In the foreground is what we take to be the original Salt and Stock Fishmongers' Hall, its elevation, as foreshortened, being almost concealed by the nearer of two prominent round towers or bastions. Very little shipping is seen below bridge; in the foreground are several boats and barges, all painted black. Of the barges, one has a white anchor on its high stern, and a black panoply or mantle edged with white, bearing large white anchors, over the stern seat: another has a scarlet and gold panoply, a high gilded stern, and rowers in scarlet uniform; another has a dark green panoply.

As touching the shape of the arches of old London Bridge, we have scrupulously examined and compared the numerous views, paintings, plans, and surveys to be found in the British Museum, in the Guildhall Library, and the Corporation Museum, and in other collections. Truly enough, both Hollar's long view of London and Westminster, of 1647, and Visscher's similar view, of 1616, present the arches,—originally twenty in number, if we include the "draw-lock," which was seventh from Surrey side,—with a more or less rounded outline. That effect may possibly be due to unskilful foreshortening. D. Loggan's view, printed by Daniel King in 1658, has both rounded and pointed arches, two of them very wide. Some of the earlier views (seventeenth and eighteenth centuries) of the bridge, from east or west, contain scarcely any arches at all. They show low square openings, formed by the piers and the deep supports of the overhanging houses in the street above. In John Norden's drawing, which is said to have been taken *temp.* Elizabeth, but was not published until 1624, we see three circular arches; the others are pointed. That which we believe to be the most ancient representation of the old stone bridge is to be found on page 73 of an illuminated MS., Poésies de Charles Duc d'Orléans. Formerly in the royal collection, the cover bears the royal arms with "G. II. R., 1757"; this priceless book is now in the British Museum. The duke composed his poems, — "Épîtres de l'Abbesse Heloys,"— whilst a captive in the tower, during the interval 1415-1440. He was grandson to Charles V., and father to Louis XII., of Valois, kings of France; and was taken prisoner at Agincourt. The volume, in its present shape, is conjectured to have been designed for Henry VII.'s queen, Elizabeth of York. This beautiful picture has in its upper portion a representation of six arches of the bridge, as seen from the east. St. Thomas's Chapel, with rounded chevet, and a flat roof, stands clear upon its pier; houses cover the interval over the four arches towards the north. The starlings and massive piers are distinctly drawn; all the arches are even-sized and circular. In the background are St. Paul's and other churches.

We will now turn to the later and, beyond a doubt, the more authentic works of Vertue, 1747-8; Boydell, 1751; of S. and N. Buck, 1749; Samuel Scott, painted in 1757 and engraved by Canot in 1761; of J. Farington, R.A., 1790, and an aquatint, 1795; to Major Yates's water-colour paintings of 1823, and 1827, and 1830; E. W. Cooke's several drawings of 1830-2; Dance's measured drawings of 1799, and his pencil measured drawing (at the Guildhall) of July 2nd, 1799; and to J. T. Smith's etching of February 5th, 1814, in his "Ancient Topography of London," 1815. These are enough to convince us that, due allowance being made for certain alterations and repairs, the old bridge did at no time contain the uninterrupted series of round-headed arches which form so conspicuous a feature of the painting under review.*

* The big round arch, with 70 ft. 5 in. span, was made in 1758-9, by removing the pier between the Old Pedlar's and Old Gutt locks. Its crown was level with the top of the base of the Monument. At this time, too, the elevation of the bridge towards its middle point was considerably raised, and the bridge was widened.

A question, then, fairly arises as to whether De Jongh really saw the bridge, and, seeing it, faithfully copied what he saw; or did he paint from current report only, or from another artist's drawing, and that drawing an inaccurate presentment? Now, in the Guildhall Library is preserved a pen-and-wash drawing, which, save for its smaller scale and some few details brought in by a slightly extended foreground, is the exact counterpart of De Jongh's picture, in respect of every particular which we have named above, the sign of The Bell and some boats alone excepted. This drawing bears in the right lower corner, "London, the 18 April, 1627." We do not hesitate to ascribe it to J. C. Keirincx. He is the Alexandre Kierings of Descamps' "Peintres Flamands," 1753.* In Immerzeel's and Nagler's Dictionaries we read that Keirincx, born 1590, died 1646, visited England in Charles I.'s reign, and did some views for the King, chiefly of the royal residences in Scotland. In his "Vertue's Anecdotes of Painting," Walpole says that in D'agar's sale were three drawings with a pen and washed by Keirincx, one having a view of Parliament House and Westminster Stairs to the water, and dated 1625. In J. T. Smith's "Antiquities of Westminster," 1807, is a reproduction of the view cited by Walpole. Smith says it is by J. C. Keirincx, and adds that it is particularly mentioned by Lord Orford. In the right hand lower corner is "London, the 27. of Ma^{r} An 1625." This date is in precisely the same hand as that of the Guildhall view of the bridge; the styles of draughtsmanship and shading of the two drawings are identical. Part II. of Mr. W. H. Overall's Catalogue of Sculpture, Painting, Engravings, &c., belonging to the Corporation (1868), describes the pen-and-wash drawing of 18th April, 1627, as being "39 inches long, a matchless curiosity, from Mr. Wilson Shakespeare."

* See also Seubert's Allgemeines Künstlerlexicon, 1878, and the Nouvelle Biographie of MM. Firmin Didot Frères, 1858, &c.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE twelfth ordinary meeting of this Institute for the present session was held on Monday evening last, Mr. Arthur Cates (Vice-President) in the Chair.

Forthcoming Lectures.

The Chairman announced that at the City and Guilds of London Institute, at South Kensington, three courses of lectures would be delivered in July, of considerable interest to young architects and pupils. The lectures are as follows: "Mathematical and Surveying Instruments," by Mr. Arthur Thomas Walmisley, M.Inst.C.E., a course of six lectures; "The Application of Modern Geometry to the Cutting of Solids for Masonry and other Technical Arts," by Mr. Lawrence Harvey, F.R.I.B.A., a course of six lectures; and "The Craft of the Carpenter," by Mr. John Slater, B.A., F.R.I.B.A, a course of four lectures. It was advisable that those lectures should be made known by members of the Institute in their offices, so that pupils and clerks might have an opportunity of attending them. The lectures would be delivered at eight o'clock in the evening, and the fees were exceedingly moderate, especially having regard to the value of the lectures.

The Board of Works Inquiry Commission.

The Chairman further stated that the attention of the Council having been directed to the evidence recently given before the Royal Commission of Inquiry into the working of the Metropolitan Board of Works, they had addressed a letter to the Secretary of the Commission, asking that in view of the evidence given before that Commission, affecting the professional conduct of members of the Institute, the Council might be furnished with copies of the authorised printed report of that evidence, and of all other evidence which might hereafter be given (applause).

Election of New Members.

A ballot then took place, when the following new members were elected:—

As Fellows:—Messrs. A. H. Halder, Barberton, South Africa; C. J. Foxward, Wellington, N. Z.; S. F. Hynes, Cork; Ernest Newton, of Bloomsbury-square; P. Currey (Associate), Norfolk-street; G. Friend, Maidstone; Edward Vigers (Associate), Parliament-street; G. C. Awdry, Great George-street; J. B. Wilson (Associate), Swansea; F. B. Wade (Associate), Victoria-street, S.W.; and Lawrence Harvey (Associate), Westminster.

As Associates:—Messrs. H. Hodgson, Queensbury, Yorks.; W. E. Potts, Manchester; H. E. Stelfox, Manchester; H. C. Charlewood, Alderley Edge; R. Watson, King William-street, W.C.; H. Huntly-Gordon, Craven-street; F. B. Lewis, Nottingham; F. O. Oertel, P. W. D., North-West Provinces, India; Ibrahim Shaik Daúd Ahmadi, Bombay; A. M. Butler, Camden-road; A. W. Cooksey, Pentonville-road; H. Sirr, Twisden-road; J. A. Jones, Sutton Coldfield; A. Broad, Croydon; W. Pott, H.M. Office of Works; and S. P. Silcock, Warrington.

Examples of Moghul Architecture in the Indian Section of the South Kensington Museum.

Mr. C. Purdon Clarke, C.I.E., next read a paper entitled "Examples of Moghul Architecture in the Indian Section of the South Kensington Museum," of which the following is an abstract:—

In his introductory remarks, Mr. Purdon Clarke gave a sketch of the origin of the Indian Museum, which was taken over by Her Majesty's Science and Art Department in 1880. At the close of that year, having been engaged in the re-arrangement of the collections, he was sent to India to acquire objects to fill up deficiencies. During his two years in India the greater part of the illustrations of Indian Moghul Art were secured for the Museum. He had made an especial study of the technical features of the several Indian arts, with a view to ascertain how far they were indigenous, and was of opinion that none of the ornamental arts were natives of the soil: the ornament of the Punjab, like that of the north-west of Persia, owed its origin to Greek art; that of Bombay to Egypt, through Assyria; that of Bengal to China, the parent also of the Burmese style; and each had to some extent become debased. Southern India and Ceylon only remained with a style of peculiarly national type. The author did not attempt to give a history of the Moghul style, considering that sufficient information had not yet been collected. Although, of Mohammedan buildings, the dates and names of the builders could be easily collected by the Government, unfortunately the researches of antiquaries in India tended more towards an almost mythical past, history which was only a few hundred years of age being neglected. The examples in the Museum afforded an inadequate illustration of the rise and development of the modern Moghul style, but, examined in their proper sequence, marked the most important changes. The casts and details from Akbar's Palace in Futtipore Sikri exhibited a distinct departure from the Pathan style, the massive lines of the Pathan style, giving way before Akbar's command to assimilate the various styles into one. This change at first was for the worse, many of the Hindu features which were introduced lessening the dignity without adding to the grace, as might be seen in the columns of the Panch Mahal and the so-called Throne column of the Divan-i-khas; in the surface decorations of the Sultana's Palace an introduction of Turki design could be noticed. The next important examples were of the time of Shah Jehan, when the Moghul style separated itself from the Pathan; the earliest formed part of one of the palaces built by Shah Jehan. Having described this example in considerable detail, the author next referred to inlaid marble columns, stating his opinion that there was no foundation for the popular idea that the Taj Mahal was built by Italians, as the builders of the palaces of Agra were quite capable of doing any of the work. At the Palace of Delhi and in the Divan-i-Am, there was a quantity of inlaid work in which the traces of Italian workmanship were quite plain; but the central panel of Orpheus, now in the Kensington Museum, would show how impossible it would be for the Italian or Frenchman who had done that work to have had anything to do with the exquisitely-designed surface-decoration of the Taj Mahal, the Palace at Agra, and the Royal Baths at Delhi. From the Agra columns to the Bulandshah house-front was a period of over 200 years, and the only materials the author had to illustrate the changes in that time were the stone screen from the tomb

at Old Gwalior, in which the style went back to the Pathan days; the model of a merchant's house in Ajmere, probably 100 years old; and models of the Golden Temple at Amritzar and the Deria Dowlet Palace at Seringapatam. The merchant's house showed the modern style fully developed, and, in a small way, presented the features of the great Rajputana palaces, most of which were modern Moghul, and exhibited an enormous difference from the buildings of Akbar and his predecessors. The model of the Golden Temple showed a development which gave the Moghul style of India its chief characteristic; and, though built by the Sikhs, was strictly Moghul. In a like manner the palaces of Deig, Ulwar, Oodipore, and Jeypore were of the same style, built by Hindu princes; and that in Old Gwalior Fort, built by Man Singh, was purely Hindu. The model of the Seringapatam Palace showed a falling off from the style, and was wanting in the qualities of the Northern work. Throughout the Deccan country the Mahommedan architecture differed from that in the North, and required a separate classification, while the very strong similarity in some of the buildings at Hyderabad to the architecture of Morocco was worthy of note. The earliest examples of the present Moghul style were the projecting bay-window and a small oriel window from an old house which was destroyed when the waterworks were built in Lahore. The construction and proportion would be much the same if executed in stone, the carpenters treating wood in building very much as masons did stone, and *vice versâ*. The front of a shop in the Sarak Chowk Bazaar at Cawnpore was an excellent illustration of the carved work of the North-west Provinces, and had cost 300 Rs., representing 24*l*., which gave a very good idea of the cost of ordinary wood-carving and house-building in India. Mr. Clarke then referred to what he ventured to call the "Revival of Moghul Art." About sixteen years ago the Collector at Mirzapore, Mr. F. S. Growse, persuaded some of the richer natives to rebuild the public Ghaut, or washing place, and started a town-hall, keeping strictly to the Moghul style. Transferred to Muttra, Mr. Growse did the same, and here many merchants rebuilt the fronts of their houses, and a Museum and other public buildings were started: all remarkably good works and in the same style. Mr. Growse also induced some wealthy bankers to restore the Temple of Bundaben, though for so doing he fell out with the late Mr. Fergusson. The author thought it very probable, however, that had they met there would have been no disputing between them. Transferred to a place on the other side of the river, and the centre of several mud-built towns, Mr. Growse distinguished himself even more, and the front of the Bulandshah House, in the Kensington Museum, was an example of one out of many hundreds of façades which grew out of the mud of Bulandshah and Khorja. Mr. Clarke then referred to the cost of the building in Bulandshah. That of seven shops and dwelling-houses was exactly 80*l*. apiece, the material being pink sandstone for the façade, and within, good burnt bricks and hard mortar. The erection of these shops, due to Mr. Growse, led to a wholesale rebuilding, all in the Moghul style and mostly in stone; the town of Khorja shortly following the example. After referring to the wooden verandahs of workmen's houses, which he had reproduced when the shop-fronts were made for the Indian artisans at the Colonial and Indian Exhibition, Mr. Clarke, in conclusion, alluded to the position of Indian architects, and the condition and future of Moghul Art in India. Like the architects of Persia, Indian architects were also the builders. The builder-architect received no special education as an architect, but had a thorough training as a builder and as a master-craftsman. If a carpenter, he was also a carver, and always a designer; in his apprenticeship he learnt a certain stock of plans, and was intelligent enough to adapt them to circumstances of site. Large working drawings would hamper him; the length and height of the façade, the position of the doors and windows, would be quite sufficient, and he would then, working on traditional lines, produce a much better balanced front than if interfered with in setting out his work. The bad period of art had passed, and the native princes and municipalities were now being encouraged to build in their own styles (applause). In 1880, the late Major Mant, R.E., and Mr. Chisholm were the pioneers; the former worked in the Moghul style, and the latter in the Hinduised style at Madras. The Palace of Baroda, begun by Major Mant, was finished by Mr. Chisholm, who, leaving the Government service, had taken up work in Rajputana, and, the author was told, had executed several important buildings. Sir Lepel Griffin was using his influence in persuading the Rajahs to build palaces worthy of themselves in the old style of their people; and Mr. Kipling, of Lahore, was engaged to build one for the Maharajah Scindia. The architectural work in India during the latter portion of this century would, the author thought, go far to atone for the atrocities in architecture which had been perpetrated all over the country during the past 150 years.

The Chairman, in inviting discussion on the paper, said that though few of them might have studied the architectural specimens in the Indian Section of the South Kensington Museum sufficiently to appreciate all the details contained in the paper, they must be grateful to Mr. Purdon Clarke for having brought those beautiful works under their notice. Probably it might lead many of them to visit that admirable collection, and so make themselves more thoroughly acquainted with them than they were at present. Mr. Purdon Clarke had been somewhat of an iconoclast in demolishing the cherished idea of their youth that the Taj Mahal and other buildings were the work of Italian artists, or the result of Italian inspiration. Probably the objects to which Mr. Purdon Clarke had referred as being in the Museum at South Kensington, and which were undoubtedly of Italian workmanship and design, would go very far to support his view. At the same time, he had no doubt that some of those who had been advocates of the Italian influence at Agra and the Taj Mahal would have something to say before they entirely adopted Mr. Purdon Clarke's theory. There was no doubt that much might be learned from workmen who were also designers, working by tradition, and producing charming works, apparently by inspiration, without having any details or even the drawings which European architects found it necessary to prepare before their works could be carried out.

Mr. R. Phené Spiers, F.S.A., said that, although he never had been in India, he happened to have been acquainted with the late Major Mant, and to have had for some years an opportunity of inspecting his drawings. When Major Mant first came to this country in 1874, he assisted him in superintending the draughtsmen who were preparing drawings from his designs. Subsequently he saw a great many of Major Mant's designs, and the general result was that he came to the conclusion that if it were possible to organise any good system of education in India for those who were to design and carry out buildings, they would find such extraordinary and valuable assistance from the native workmen that they might be able to produce a style of which the century might be proud. The designs of Major Mant were of the highest kind, he having gone through a regular and systematic course of architectural education. Major Mant educated himself; his first fancy being for Gothic, and it was only when he found the great difficulty of getting the workmen to carry out the details of that style, that he determined to see what would be the best types of Indian work, and how they could best be reproduced. With that aim Major Mant visited most of the celebrated temples, obtaining photographs and drawings of them. On returning, he obtained the services of draughtsmen and good workmen, and having set out the main elements of the design, somewhat in the same way as Mr. Purdon Clarke had done, he allowed the workmen to work out the decorative portions with their own detail. He (the speaker) remembered, when superintending the decorative department, that he found there was no need for his supervision, the work being carried out by the artisans without any drawings or assistance. Very much the same thing took place in Egypt, where he had been astounded at the marvellous way in which a plasterer would decorate a vase. These men had gone through no education, but simply from tradition and by intuition they produced the most beautiful forms without any special design being made for them. Reference had been made to the Italian origin of the ornament in the Taj Mahal. He believed he had heard it stated that Italian workmen had worked there, and though he had never understood that they erected the mosque, he had heard that they had some hand in the detail of inlaid marble. There was no doubt that the forms of the decoration of the Taj Mahal were distinctly Italian in character. Now, however, they were told that those forms were probably obtained from the Persians, and if they looked to that quarter they would find a very Italian feeling running through the Persian decoration of the sixteenth century. The Persians had always been a source to which they had gone for their work. From time immemorial it had been pointed out that most of the decorative detail had been derived from the East, and that they were indebted to the Persians for a great deal of their detail. Therefore the decoration of the Taj Mahal might have been influenced from the same source. Mr. Clarke had mentioned a curious point, which had not occurred to him, but which he could see accounted for many of the forms, and that was that the trades of the carpenter and mason were mixed up together. A mason very often would design forms and work them out as if they had to be done in wood, while the carpenter frequently would carve forms which were more adapted to stone. Referring to the forms of roofs, he said that a curved form, called the Bengal roof, was invariably adopted throughout India from the seventeenth century. That was a form derived from wooden construction, or, in other words, the original form of it was in bamboo, and it was subsequently copied in stone. He would have liked to have heard more about the origin of the cusped arch, which was certainly not a constructive form. The suggestion was new to him that it had originated from the screen behind the figures of Buddha. There might be a similarity between the two, but when it was considered that it occupied the important position in all those buildings of Moghul architecture, it was difficult to imagine it could have been taken from a source of that kind. There were several instances of a three-cusped arch in Cashmere, almost invariably surrounded by forms which would be framed up. Although there was the form of an arch, it was enclosed by a rectangular frame, and it was one of the great difficulties of Major Mant's work to know how to construct that arch properly. Those who had visited the exhibition of the Russian painter Verestschagin's works would have observed some of the best representations of Moghul architecture, such as the interior of the Pearl Mosque, showing the exquisite beauty which was obtained in all those buildings. To improve modern Moghul architecture, a knowledge of Byzantine or Romanesque styles was requisite, and Mr. Emerson had introduced into his designs that character which would raise it to a high standard. He was glad to hear that at the present day there was an attempt being made to utilise the native labour of the country, and that Sir Lepel Griffin was using all his endeavours to have the buildings carried out by native workmen and designers. Mr. Spiers concluded by proposing a hearty vote of thanks to Mr. Purdon Clarke.

Mr. George Aitchison, A.R.A., said that Indian architecture was a subject about which he knew very little, but there were one or two questions he should like to ask. The idea that the forms of Indian architecture were derived from the Chaldeans was a new light to him, as he had always thought that everything that was done in the world came from India. They knew that the opinions and practices of the Stoics and Cynics were supposed to have been derived from the doctrines of Buddha, and that the mathematics of India were introduced into Europe by the Arabs. As far as all information went, all the arts and sciences had come from that quarter, and he was, therefore, rather astonished to hear Mr. Purdon Clarke taking a different view of the matter. The style, undoubtedly, was rather debased at present, but it seemed to him that as they had discovered a people who were dependents of the English Crown, and who had an architecture of their own, they might import a large number of those skilled Indians to teach them the art of their profession (laughter). As for sending out gentlemen well-up in military tactics, and who had a profound knowledge of gunpowder, to teach the Indians designing, it was extremely ridiculous (hear, hear). As

to the patterns of the ornament, they were handed down from generation to generation, and amongst an improving people they were improved or altered from time to time. In the case of one of the most conservative of people, and at the same time one of the most brilliant of nations, viz., the Greeks, there was a remarkably small amount of original design in their work, and when they had found a type they continued improving it to the very last. When a people were unfortunate enough to have lost their energy and discipline, their higher qualities perished with it, and it could not be expected that a conquered people would exhibit the same vigour and spirit possessed by them when free. But it was remarked, even in the times of the Greeks by Aristotle, that the people of Asia, although inferior to the Europeans in spirit, were superior to them in intellect and taste. The capacity of executing patterns from memory which struck them, therefore, was nothing at all when it was considered in its proper light. A distinguished water-colour artist, a collection of whose drawings was to be seen at South Kensington, went out to India shortly after the Mutiny, and, being in the north of India, was one day overtaken by a heavy storm of rain. Taking refuge in a newly-built tomb with his dragoman or moonshee, a native entered with two or three laths, one of which he broke, and by its aid worked out on the wet plaster one of the most elaborate ceilings possible. On saying to his dragoman that the man was one of the most wonderful workmen he had ever seen, the dragoman replied that the man was a fool, who only knew two patterns, while his father knew five, and his brothers three!

Mr. Hugh Stannus, referring to the arch, asked if Mr. Purdon Clarke would tell them whether the skew-backs, of which there seemed to be indications in some specimens, were used to place the centering upon? They knew that in the Roman arches the projection of the impost was used to support it. Mr. Clarke had mentioned that the word "arch" was also the old word for the bow, but they had the same thing in English. The word "arca" meant bow, and he supposed it was a sort of idiom which ran through all the Aryan languages. Some time ago advice was given him by a friend of experience not to interfere with the Indians, as they understood decoration quite as well as the English. He was advised that he might supply general lines, and then leave the carrying out of the decoration to the artisans, and this bore out what Mr. Clarke had said. It was clear the natives had a living style, and all the Englishmen need do was to set the main lines and leave the workmen to carry out the design in their own vernacular. He was glad to see that the abominable imported official style had received its death-blow in India, and that they would now have the genuine Indian style. The fifth drawing on the third row Mr. Purdon Clarke had not alluded to, but he understood there was a joke about that, it being pointed to as "Indian architecture as understood by the Public Works Department." * When such a design as that was compared with the designs in the Indian style, one saw how much more proportion, vigour, and refinement was to be found in the Indian work. Mr. Purdon Clarke had spoken about "fringed cornices," and he did not know whether it had occurred to the lecturer how wanting the Indians were in what the English termed "moral courage," and how much that defect of character showed itself in their architecture. People who were timid and lacking in moral courage were afraid of a hard, firm line. They did not like hard, firm lines for their roofs, or plain semicircular forms for their arches, and, rather than have them, they enriched and thus produced the lace-like patterns, cusps, &c. His hearers would remember the ornament on the top of the Ducal Palace at Venice, as an instance in point, looking as it did like a valance turned upside down. It had an Oriental origin, and was an instance of the Oriental dislike to hard, firm lines. That brought one to remark upon the great want of reticence there was in all Indian work. If they could, without interfering with the Indian spirit, infuse some little reticence into the Indian workmen and persuade them to leave a few square feet here and there of plain wood or stone, they would greatly improve it. He had always felt in comparing Indian with Greek work, that they stood at two extremes, and if they could infuse a little more of the Greek feeling into Indian work he thought it would have the elements of a graceful architectural style. Mr. Clarke had spoken about some of the Arabic details, but he always understood that the Arabic style was a corruption of the Byzantine. At the time the Byzantines founded their empire they employed Greek artists, and one could see, in a great deal of the Arabic detail, the degraded remains of Byzantine work. It would be interesting to know how far Mr. Clarke believed that theory was reliable, and how far it could be taken to account for any of the Persian and Indian work he had spoken about that evening.

Mr. Wyatt Papworth said he would have liked to have had some more information with respect to the peculiar work at Agra. Many years ago many of its marbles were brought over to England, and he believed a piece was to be found in the Institute collection. (The Chairman: "It is in that case, yonder.") At a later time some writer gave the name of the Italian architect who had been employed at Agra, with the number of the workmen and the cost of doing the work. As to the forms having come from Persia, he recollected reading that the peculiar scroll to be seen in the Persian shawls was derived from France. It was stated that Louis XIV., desiring to have some magnificent Persian work done, had designs made for shawls and sent over, so that the ornament in question was derived from a representation of the acanthus. In reading a memoir lately he found it stated that some Chinese who came over to England acknowledged, in the course of a conversation, that they had in the time of Louis XIV. taken to imitating French patterns. All this was of about the same period, and might bear somewhat upon the disputed Agra question, and a little more research into the matter might lead to a satisfactory solution.

Professor Kerr was afraid he could contribute nothing in the way of archæological knowledge to the discussion which had taken place, but he might enter his protest against his friend Mr. Aitchison's humorous description of the necessity of having Indian workmen to decorate our buildings, lest it should go forth in the report as a seriors observation. Mr. Aitchison was accustomed to make such jocular remarks with great effect, without intending that they should be taken so seriously as some people might take them. It seemed that one point had been made out pretty clearly, viz., that what was termed Indian architecture was really not constructive at all, but simply decorative. The genius of the Oriental had always been more decorative than constructive. He believed that was a question of race, and it would take a long time to develope it into anything like settled principles. But if they could accept that idea, it might explain a great deal. He could quite understand that the Indian architect-builder, who was really a carver, a modeller, or what they pleased, was a decorator in a style of decoration not dependent upon the construction. It made no difference what the form of the constructive features might be upon which architects placed almost their sole reliance, for the native architect was prepared without any notice to decorate the structure in his own way, and to produce a certain effect, for what it might be worth. And it was a matter of opinion what it was worth. For himself, he did not think it was worth much compared with Greek, for instance. He considered as a matter of principle that the one was architecture, while the other was not so at all. He was open to eclecticism of sentiment, but it seemed to him that those who contemplated Greek architecture seriously must say it was based on solid, substantial, constructional principles; and so also was Mediæval architecture. All the Greek forms could be more or less traced to constructional necessities, and the Gothic forms could be similarly traced to constructional principles; while the Indian forms and decoration seemed to be based on nothing but caprice. That was a very important distinction to draw, and much as they might in these days desire to cultivate eclecticism, out of a sense of liberality or generosity of an artistic kind, he hoped they would never allow themselves to be led away by mere eclecticism into the idea that there was anything in this architecture that was worthy of their acceptance except as mere decoration. If they looked at the photographs and drawings on the wall they would see that the forms generally, although they might be occasionally graceful, were not constructional. Now, as architects, they were called upon to say whether that was so or not. If they were not constructional, then they should regard them as decorative, and merely for what they were worth. The story Mr. Aitchisen told them of the Indian workman who with the lath proceeded, without any notice, to decorate a plaster ceiling, was exceedingly interesting as a manifestation of what might be called mechanical artistic design. The man only knew two patterns, but those patterns he thoroughly understood, and it was surely better to understand two patterns thoroughly than not to understand a great many (laughter). That ought to teach them the lesson that probably the great range of study over which architects were expected to go in the present day might have an emasculating effect on the artistic mind to a certain extent; but, at the same time, they must not forget that this was an age in which a great range of knowledge was a matter of necessity, and, therefore, they might rest contented to do the best they could.

Mr. E. J. Tarver asked whether the curved form which had been alluded to, did not always join the domes in some shape or another, and whether, in fact, it was not similar to what was to be found in Byzantine architecture?

Mr. Aitchison wished to have some information as to the staircases shown on the screen.

Mr. Purdon Clarke said that the staircases had their risers very high and their treads very narrow. British influence had probably made the treads rather wider, but, as a rule, staircases in Eastern Architecture were not made a leading feature; in fact, the great difficulty in an Oriental house was to find how to get upstairs, as the staircase was usually concealed. The staircase shown on the screen was made of bricks. The mortar was excellent: indeed the Indians seemed to possess the secret of the Roman mortar; he had never seen bad mortar anywhere in the north of India. There was no doubt that the arch in India was not constructional, but Major Mant endeavoured to make a constructional Indian arch. There were two photos on the screen of arches cut out of a single stone. The Gwalior gateway which was erected in the recent Indian Exhibition had the arch and spandrels cut from a single stone, 14 ft. long, 9 ft. high, by 20 in. thick. The brick builders of the Punjaub often built brick arches without centres, such as an English architect would hesitate to build with centres. They also employed little or no scaffolding, as the contracts were taken at so low a price that they could not afford them (laughter). A thing was not necessarily Indian because claimed to be so. The Hindoos claimed the invention of almost everything. Recently some of the native papers had settled that the Hindoos had not only invented gunpowder, but that they also had steam-engines in the remote past. There was little doubt about the Italians having been in Agra; people who visited Agra about the time came in contact with them. One Italian was ten years in the East, and is said to have had about sixty Italian workmen with him. A native writer of the time of Shah Jehan related that the glory of Agra at that time consisted in the diversity of its styles of building, and that there were to be seen many houses in various other styles. He (the speaker) believed that the Italians who went out were employed in building Italian villas, and they certainly had left traces behind them, especially on the Oude side, where the houses were really half Italian. Several of the Umballa drawings would show how that style had survived. The only detail in the Taj, which would have been influenced by the Italians, was probably the screen, but he thought the Italians would have done better. The Persians went to Italy to study, and when they returned they brought back a school of painting with them which survived to this day, distinctly Italian in style. How far European influence had affected the architecture of Persia was not known. The round-headed Persian arch belonged to the country, and was the domestic style, and it seemed to him that the Persians had always worked in that debased Romanesque style for their houses. The style termed here Persian was called by the Persians, Turki. It was the style of their Arab conquerors, and its use was restricted to gates of towns, palaces, and

* The drawing in question gave a representation of a very commonplace so-called "Classic" building, which might have been either a railway goods *depôt* or the retort-house of a gasworks.

PHOTO-LITHO. SPRAGUE & Co 22, MARTINS LANE, CANNON ST, LONDON, E.C.

ENNISMORE GARDENS, DOVER.—Mr. James Neale, F.S.A., Architct.

ENNISMORE GARDENS, DOVER.—Mr. James Neale, F.S.A., Architect.

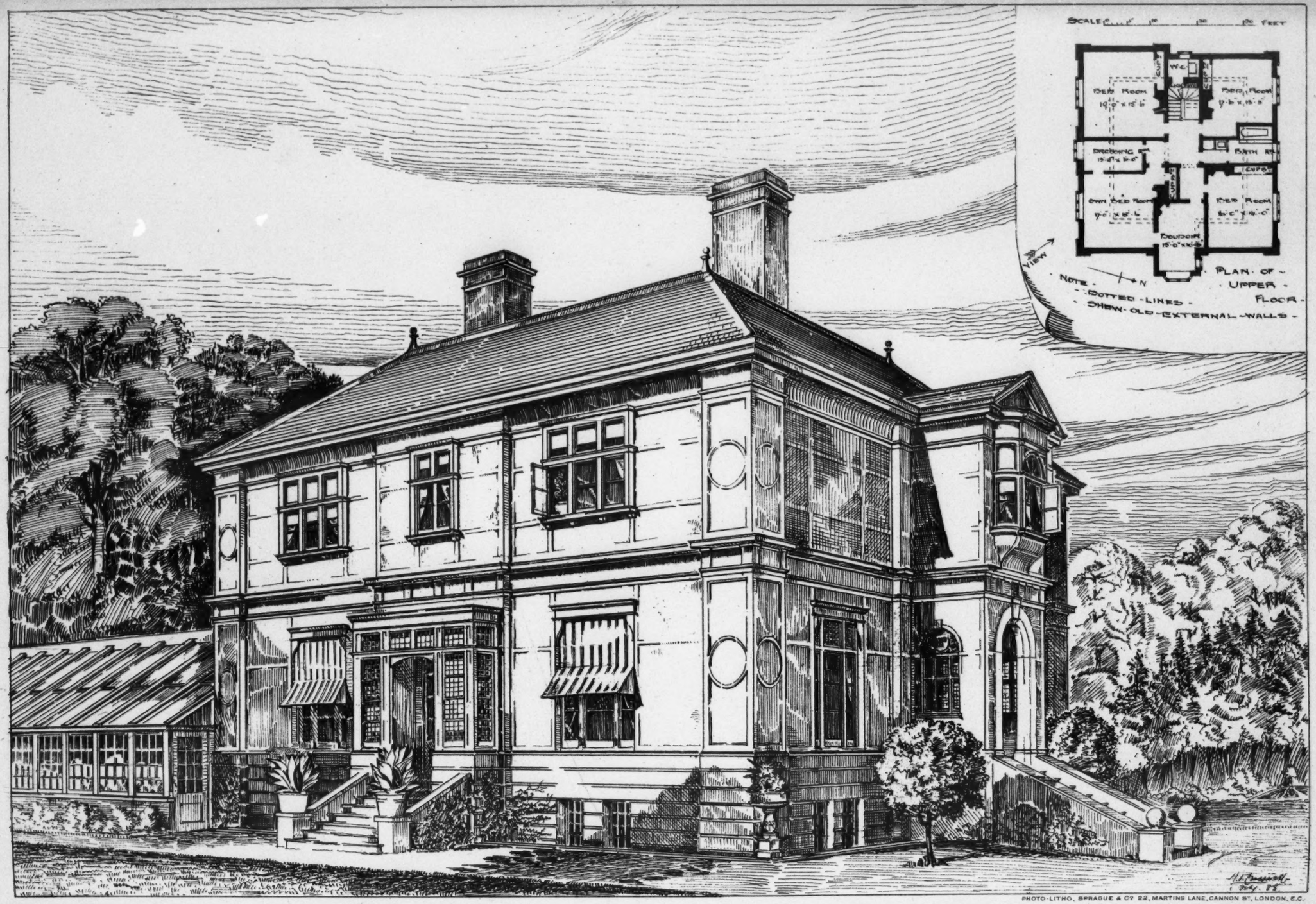
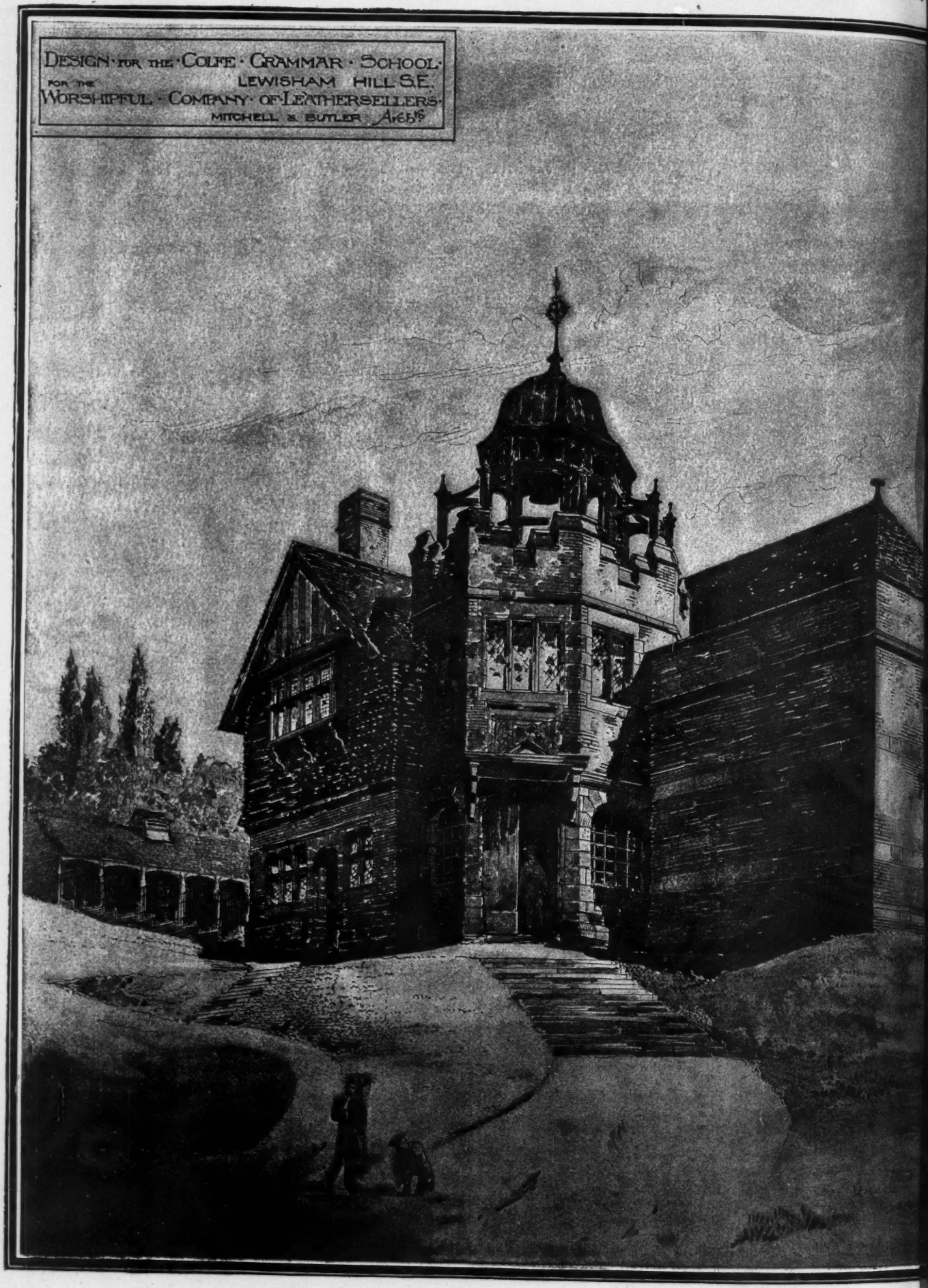


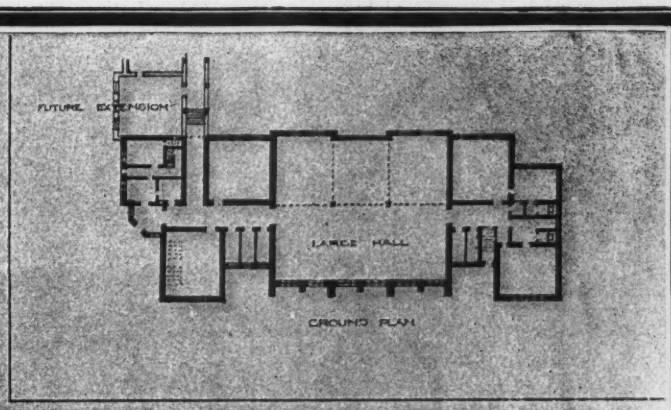
PHOTO-LITHO. SPRAGUE & Co 22, MARTINS LANE, CANNON ST, LONDON, E.C.

ALTERATIONS AND ADDITIONS TO LAMPTON HALL, MIDDLESEX.—Mr. H. O. Cresswell, A.R.I.B.A., Architect.

ALTERATIONS AND ADDITIONS TO LAMPTON HALL, MIDDLESEX.—Mr. H. O. Cresswell, A.R.I.B.A., Architect.

DESIGN FOR THE COLFE GRAMMAR SCHOOL
FOR THE
WORSHIPFUL COMPANY OF LEATHERSELLERS
LEWISHAM HILL S.E.
MITCHELL & BUTLER ARCHTS





The Phototype Co., 306, Strand, London.

"OLD PALACE"

RICHMOND - SURREY

AS ALTERED

FOR COL. R.W. THOMPSON J.P.

MR. H.O. CRESSWELL A.R.I.B.A ARCHITECT.

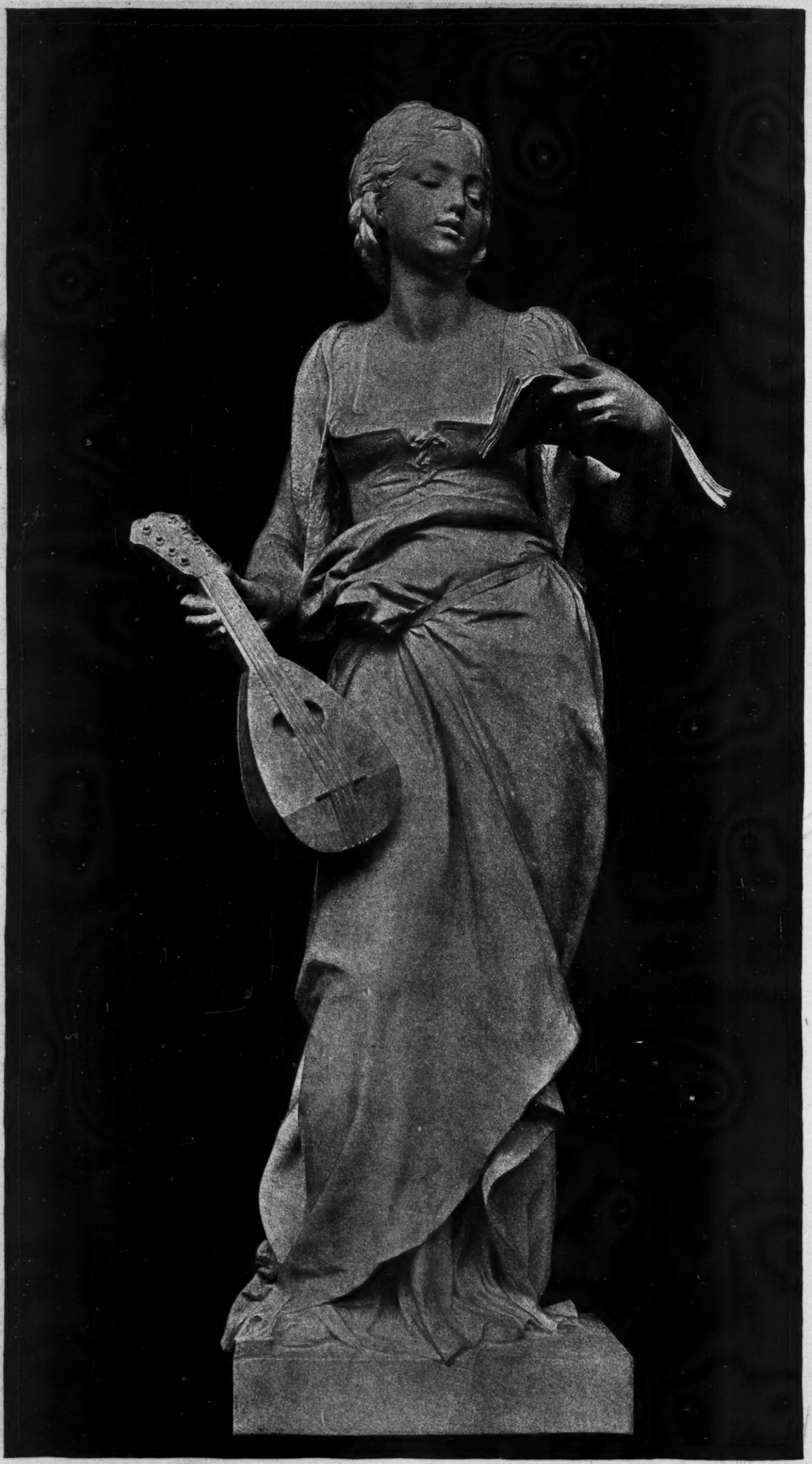
H.O. Cresswell
March 1883

PHOTO-LITHO. SPRAGUE & CO. 22, MARTINS LANE, CANNON ST., LONDON, E.C.

PHOTO-LITHO. SPRAGUE & Co 22, MARTINS LANE, CANNON ST., LONDON, E.C.

HOUSES, ROSSLYN HILL, HAMPSTEAD.—Mr. James Neale, F.S.A., Architect.

BUILDER, JUNE 10, 1899.



The Phototype Co., 308, Strand, London.

"LE CHANT:" STATUE INTENDED FOR THE GRAND STAIRCASE OF THE HÔTEL DE VILLE, PARIS.

M. BARRIAS, Sculptor.

The Phototype Co., 303, Strand, London.

"LA MUSIQUE:" STATUE INTENDED FOR THE GRAND STAIRCASE OF THE HÔTEL DE VILLE, PARIS.

M. BARRIAS, SCULPTOR.

mosques; but in all private houses the style was a very debased Romanesque. With regard to Chaldea, Sir George Birdwood had been working at the question, and found that a great deal in Indian symbolism belonged to Chaldea, going back before the present Hindoo Pantheon was invented, running through their old decorative arts, and being used in planning their temples.

The vote of thanks to Mr. Pardon Clarke was then accorded with much applause, and the proceedings terminated.

EXAMINATIONS AT THE SANITARY INSTITUTE OF GREAT BRITAIN.

AT an examination held in connexion with this Institute on June 7th and 8th, seventy-five candidates presented themselves,—ten as Local Surveyors and sixty-five as Inspectors of Nuisances. Questions were set to be answered in writing on the 7th, and the candidates were examined *vivâ voce* on the 8th.

The following candidates were certified to be competent, as regards their sanitary knowledge, to discharge the duties of Local Surveyor, viz., Messrs. John Darch and Thomas Lowther.

The following candidates were certified to be competent as regards their sanitary knowledge to discharge the duties of Inspectors of Nuisances, viz., Messrs. H. J. Adams, D. C. Amor, W. F. Bishop, H. Boothman, W. Boyce, C. A. Bryant, J. H. Catten, J. Clarkson, R. C. Cordon, J. H. Cox, J. H. Dyson, W. H. Edmonds, C. W. Evington, J. G. Fincher, J. T. Gardner, R. Geary, A. Gillespie, W. L. Harrison, R. H. Head, A. R. Hills, W. F. Hobbs, J. Jones, W. Jours, P. Kett, W. H. Knight, J. Lander, F. J. Lawrence, G. H. Lock, J. Lund, F. M. Mackenzie, E. Milne, W. Nesfield, D. Oldfield, J. Powell, J. Pratt, W. Richardson, R. Rogers, J. E. Rugg, J. T. Shawcross, G. A. Smith, J. Stevenson, W. H. Temple, T. White, J. Wild, A. W. Willey, and J. Woonton.

Illustrations.

SCULPTURE FOR THE HOTEL DE VILLE, PARIS.

THE two statues, of which we give illustrations, entitled "Le Chant" and "La Musique," are intended to be among the sculptural decorations of the grand staircase of the Hôtel de Ville, Paris. They are the work of M. Barrias, and are among the works in sculpture exhibited in the *Salon* of this year.

COLFE'S GRAMMAR SCHOOL, LEWISHAM HILL.

THERE were no fewer than 162 designs submitted in the recent competition for this school, owing, no doubt, to the small amount of work required from competitors,—a plan of the ground-floor and one elevation alone being asked for. The view given herewith was not, therefore, one of the drawings submitted in competition, but has been subsequently prepared, and is at present exhibited in the architectural room of the Royal Academy. Dark red bricks were proposed for the general walling, the roofs to be covered with light tiles; stone to be used as sparingly as possible for the window mullions, and other dressings.

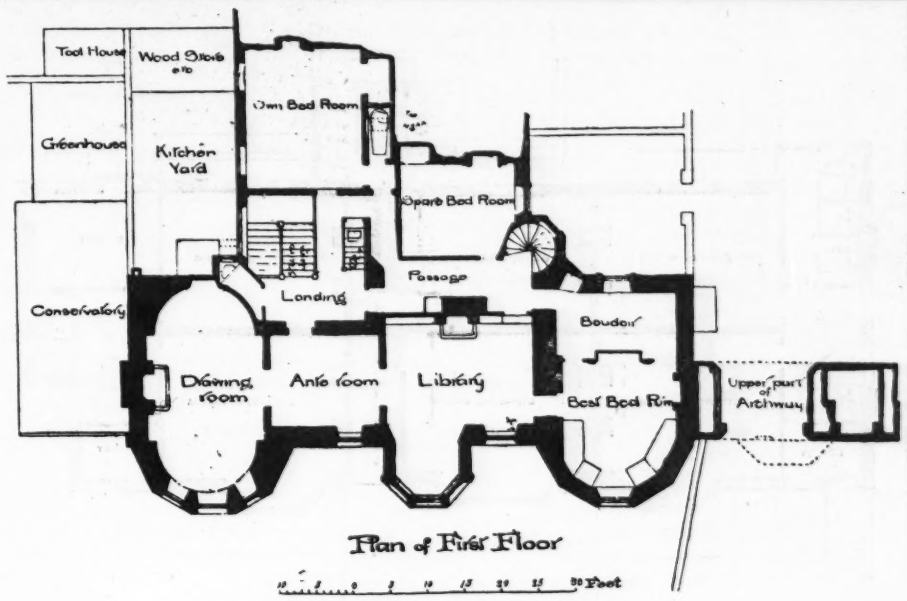
ARNOLD B. MITCHELL.

ALTERATIONS AND ADDITIONS TO LAMPTON HALL, MIDDLESEX.

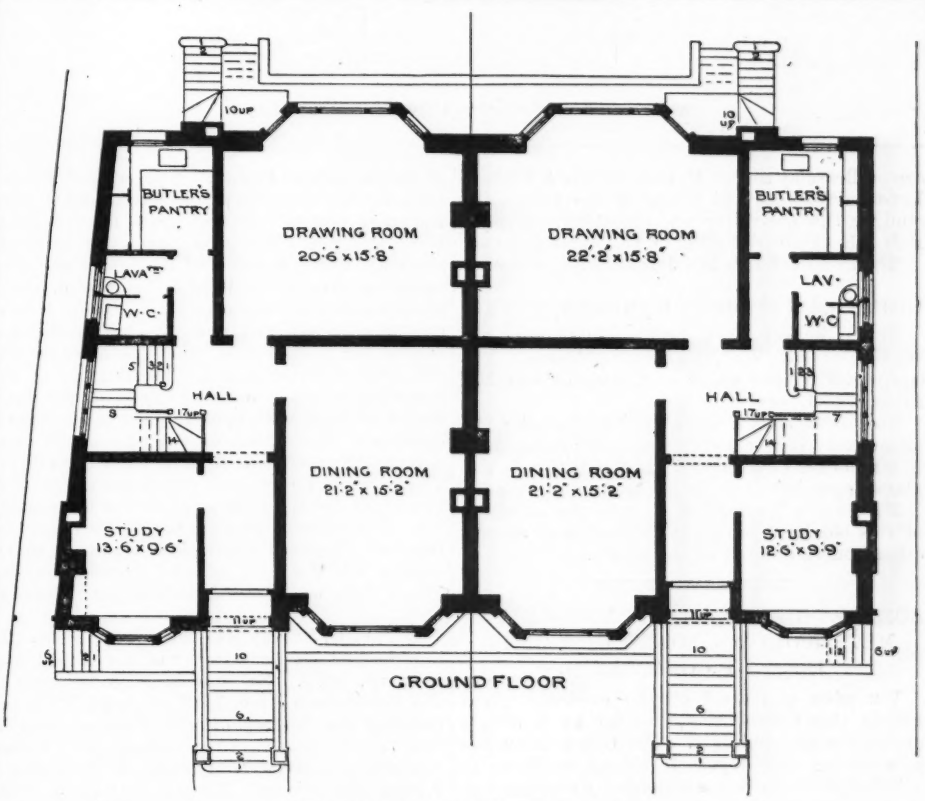
THIS was originally an old farm-house which had been transformed into a residence many years ago and altered to suit its new requirements. It consisted of a basement, ground, and first floors, the latter being of much smaller area than the two below it, and with thin lath-and-plaster external walls carried on the joists inside the main walls, as shown on plan. Externally the house was stuccoed.

The alterations which have just been completed for Mr. Hugh R. Peake consist of a new first floor with brick external walls and re-arrangement of parts of the ground floor and basement, hacking off the old stucco and rough-casting the whole building with cement rough-cast, with small cement screeds at the angles to obtain a true line, and cement core at top.

The work was carried out by Mr. J. Dorey, builder, of Brentford, and the architect was Mr. H. O. Cresswell.



The Old Palace, Richmond, Surrey.



Houses, Rosslyn Hill, Hampstead.

THE OLD PALACE, RICHMOND, SURREY.

THIS old house, to which much historical interest attaches, was formerly a portion of the Royal Palace of Sheen, and is still in the possession of the Crown, but the portion here illustrated formed no part of the royal apartments,—as is popularly supposed,—as they (the royal apartments) were situated on the river front some two hundred yards away from this spot or further, and of which, unhappily, no vestiges remain at the present day.

The building has been so much altered in the Queen Anne period, and at subsequent dates, that probably little more than the main walls and archway can be ascribed to Henry VII.'s time,—when the whole palace was rebuilt,—and probably parts of the walls themselves have been taken down at later dates and rebuilt with the old bricks.

During the "stucco period" the walls on the garden front were plastered over with that material and "lined-up" to represent stone, and probably about the same time many of the old Queen Anne window-sashes, with their substantial sash-bars, were replaced with poor and thin-looking substitutes.

The alterations which have just been carried out for Col. R. T. Thompson included the stripping of the stucco and re-pointing the brickwork, the bricks being of a nice strawberry colour, and about 2¼ in. thick, with wide joints; stripping and re-tiling the roof; rebuilding parts of the parapets, some of the chimney stacks, and the centre bay for about half its height, the brickwork of which was quite rotten.

Internally, the work has included re-modelling the plan in parts, laying on gas and water, providing entirely new sanitary arrangements, and drainage, and re-decoration throughout.

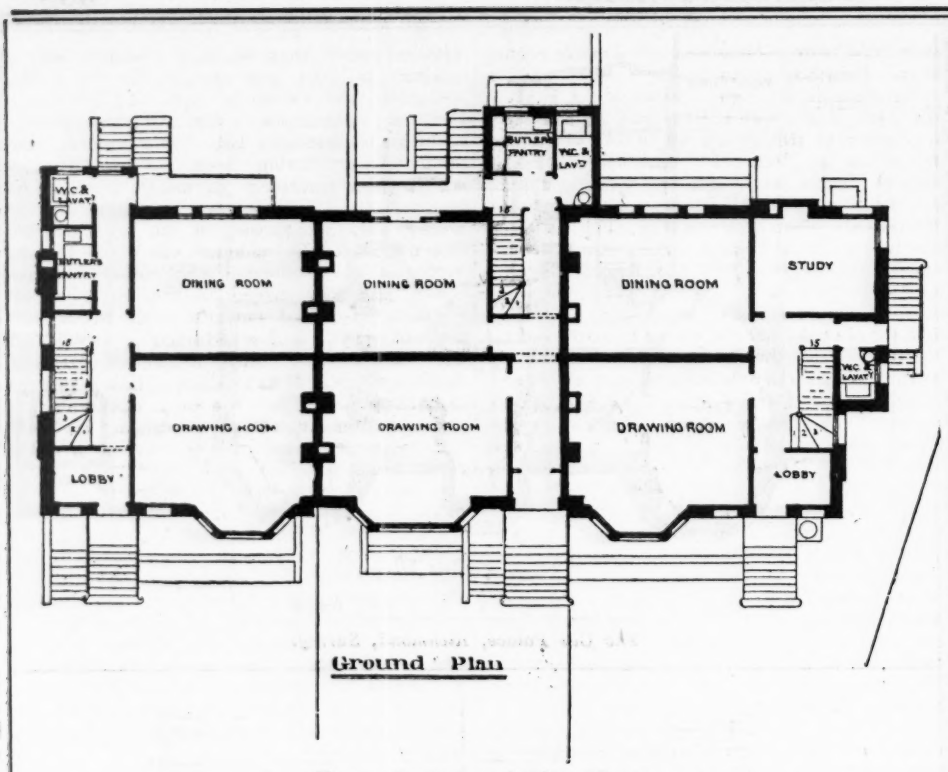
No attempt has been made to effect a "restoration" in any sense, as there was very little evidence to be obtained as to what the original design was; besides which, it would have entailed almost rebuilding the house, and destroying the interest of what is left.

The contractor for the building work was Mr. J. Dorey, of Brentford, and the architect Mr. H. O. Cresswell. The drawing from which the illustration is taken is in the Royal Academy exhibition.

HOUSES, ROSSLYN HILL, HAMPSTEAD.

THESE houses have been erected by Messrs. Allison & Foskett, of Hampstead. The plans illustrated show the general arrangements. There is a billiard-room in the basement of each house, so planned as to be separated from the kitchen and other offices. The houses are kept well out of the ground, so as to secure light and airy basements.

The elevations are faced with Leicester pressed bricks; the quoins, arches, and cut brickwork are of Lawrance's bricks. The roofs



Houses, Ennismore Gardens, Dover.

are of Broseley tiles. Messrs. Allison & Foskett have carried out the whole of the works, including the hot-water and plumbing. Messrs. Bell & Beckham did most of the painted glass.

The architect was Mr. James Neale, F.S.A.

HOUSES, ENNISMORE GARDENS, DOVER.

THESE houses have been erected for Mr. W. H. Crundall, J.P., the Mayor of Dover. The contractor for the whole of the works was Mr. Adcock, of Dover.

The lower stories are of red brickwork; the upper story is of tile-hanging and pebble-dash. The roofs are covered with dark red tiles. The plans appended show the general arrangements.

Mr. James Neale, F.S.A., was the architect of this block of buildings, and also of several other houses erected on the estate.

SOME EVIDENCE GIVEN BEFORE THE METROPOLITAN BOARD OF WORKS INQUIRY COMMISSION.

WE give a *résumé* of the evidence given before this Commission,* so far as it affects architects and builders. The Commission has now sat for nine days. It should be borne in mind that the evidence is given by witnesses on oath.

Before commencing the proceedings, Lord Herschell said he wished it to be publicly known that under the statute which had been passed in relation to the Commission, the Commissioners had power to compel the attendance of witnesses, and that any witness who refused to answer any question put to him by the Commissioners would be liable to imprisonment. He also wished it to be known that every witness who, in the opinion of the Commissioners, made a full disclosure upon all matters in respect of which he was examined, would be entitled to a certificate which would free him from liability to any proceedings, either civil or criminal, in respect of matters as to which he had been examined; but that any witness who, in the opinion of the Commissioners, did not make a full disclosure as to all the matters upon which he was examined, would remain liable to any proceedings, civil or criminal, which the evidence might disclose him to be liable to.

Mr. J. E. Wakefield, Clerk to the Board, was the first witness examined. He described the general conduct of the business of the Board, the constitution of the various official departments, and the working of the committees. The Works and General Purposes Committee, which is a Committee of the whole Board, met every Monday, received and considered reports from the seventeen sectional committees, and made its recommendations to the Board, which met in public every Friday. The only difference between the meetings of the Works and General Purposes Committee and those of the Board were that the public were excluded from the former. Every member of the Board was summoned to attend the Works Committee, and a large number usually attended. There was no standing committee for considering questions of tender for property or other matters affecting the estates of the Board. The decision of any questions relating to the property of the Board would be dealt with upon reports or recommendations of the officers of the Board. The rule was to have written reports from the officers. There were no general regulations or instructions laid down for the guidance of the officers. The first entry in the minutes of the Works and General Purposes Committee, relating to the letting of the site of the London Pavilion Music Hall, was Mr. Villiers's letter of Nov. 12, 1884.

Mr. W. R. Selway was the next witness. He said he had been a member of the Board since January, 1873. He was deputy-chairman of the Board from June, 1882, to June, 1884. He detailed the history of the Pavilion and its site down to the time when Mr. Villiers became the Board's tenant at a rental of 7,000*l.* per annum. Messrs. Speedy & Poole offered the higher rent of 7,500*l.*, and offered to give security for the proper conduct of the hall, but their offer was not accepted, possibly because they had then two other music-halls, and it was thought undesirable that they should have a third. The late Superintending Architect (Mr. Vulliamy) reported to the Works Committee on the 24th of November, 1884, as to the letting of the site of the Pavilion. Mr. Vulliamy reported that the site contained a superficial area of 11,913 ft., on which he should place a ground-rent of 3,000*l.* per annum. To this he added the value of the licences of the music-hall, which he considered to be worth 15,000*l.* It was afterwards resolved by the Committee, on the motion of Mr. Fowler, to let the site for a music-hall, to inform Mr. Villiers that the Committee would be willing to receive any proposal from him with regard to subsequent negotiations, and that the reply of Mr. Villiers be submitted to the Committee unopened, and that it should be opened by the Chairman. On the 1st of December there was a meeting of the Committee, at which a letter dated Nov. 29 was considered. Mr. Villiers's offer was to take the site at a ground-rent of 2,700*l.* per annum, and to give 15,000*l.* as a premium for the licences,—exactly the sum named by Mr. Vulliamy in his report. That report was, of course, a private document, and was no doubt drafted in Mr. Vulliamy's office. It was moved by Mr. Harben, seconded by Mr. Runtz, that the land be offered to Mr. Villiers on the following terms,—a ground rent of 3,000*l.* per annum, option of purchase at twenty-seven years, and a payment of 15,000*l.* upon confirmation of licence. He (Mr. Selway) moved as an amendment, that the offer of Mr. Villiers be declined. The amendment when put, received 5 votes; against it there were 18. The original motion was then adopted by 19 to 2. Subsequently Mr. Pyke wrote offering to give a ground rent of 4,000*l.* a year for the site. But in the meantime Mr. Vulliamy had written to Mr. Villiers, making the offer or proposal to Mr. Villiers founded on the resolution of the Committee. Mr. Villiers wrote the same day accepting the terms. That was on the 4th of December. Mr. Pyke's letter was received on the 8th, but it was resolved not to entertain his offer, although the Solicitor advised that the transaction with Mr. Villiers was not a binding contract, not being under seal. The first plans for the Pavilion Music-hall bore the names of "J. Ebenezer Saunders and Robert J. Worley, joint architects." Mr. Saunders was a member of the Board. Mr. Selway was next examined as to the disposal of the sites in Northumberland-avenue. Asked with regard to the Grand Hotel, he said he had no official knowledge that Mr. Saunders was acting as architect, in conjunction with Messrs. Francis, for that building. He did not think that it had ever been officially before the Board. Re-examined as to the Pavilion Music-hall site, Mr. Selway said that a lease of it was granted to Mr. Villiers on the 6th of March, 1886, for a term of 80 years, at an annual rent of 2,650*l.* Asked what was the explanation of this diminution from 3,000*l.*, he said there were two leases granted, one for the Pavilion for 2,650*l.*, and another for an adjoining building, part of the site, called the Piccadilly Restaurant, at 350*l.*, which represented the site of an old public-house, the "Black Horse." This lease was afterwards assigned by Mr. Villiers to Mr. W. Wedderspon Grey, who was afterwards proved to be the brother of T. J. Robertson, of the Architect's Office.

Mr. Thomas Blashill, the present Superintending Architect of the Board, gave evidence as to the proceedings in connexion with certain new buildings at Albert Gate, whose abnormal height has recently been made the subject of questions in Parliament. This was with the view of investigating a statement alleged to have been made by Mr. Green, of the firm of Archer & Green, the architects of the buildings in question, to the effect that "he (Mr. Green) and Mr. Cates had influence enough at the Board to carry anything they pleased." That this statement was made by Mr. Green was sworn to by Mr. B. G. Lake, a solicitor acting for the London and County Bank, and by Mr. George Sheward, the manager of the branch of that bank at Albert Gate, Knightsbridge, adjoining the proposed lofty buildings.

Mr. Arthur Green, was called the next day, and swore that he never made any such statement as that alleged, and that he did not mention Mr. Cates's name.* Mr. J. W. Hobbs, of the firm of J. W. Hobbs & Co. (Limited), the builders of the lofty buildings at Albert Gate, and several members of the Board, were next called and examined at great length on the subject of these buildings, the object being to elicit if possible, whether any undue influence had been exercised or attempted in this matter, especially with regard to the line of frontage.

Mr. T. J. Robertson was the next witness examined, but as he, no doubt prudently, decamped after being under examination for a day, it is perhaps hardly necessary to go through his evidence. He described himself as the Assistant Surveyor to the Board, Mr. Goddard being the Surveyor. It was his duty, he said, under the immediate superintendence of the Architect, to prepare reports and conduct correspondence on the letting and sale of the Board's lands and properties after personal negotiation by the Architect, making arrangements for sales of land, houses, &c., preparing plans for laying-out building land, preparation of estimates, examination of accounts, pay-sheets, &c. His immediate superior was Mr. Goddard. He admitted that it was upon his suggestion that Mr. Villiers sent his letter of November 12th, offering to become the tenant of the Pavilion site. He denied, however, that he sent Mr. Villiers any communication on the subject of that letter while the negotiations

* The Commissioners are Lord Herschell, Mr. Bosanquet, Q.C., and Mr. H. R. Grenfell. Lord Herschell presides.

* Mr. Cates, of course, through the public journals, promptly disclaimed the possession of any undue influence with the Board.

were pending. The Architect's (Mr. Vulliamy's) report to the Committee as to the value of the site was drafted by Mr. Goddard.

Mr. James Ebenezer Saunders, F.R.I.B.A., now an Alderman of the City of London, and until January last a Member of Board, was sworn and examined by the Chairman with reference to the site of the Pavilion Music Hall. He said it was not until the 17th of December, 1884, that he received the first communication from Mr. Villiers asking him to act as architect of the music-hall. He received a letter from Mr. Villiers on the 22nd of January following, relative to the terms of appointment, which were that he was to be paid the usual professional remuneration of 5 per cent. on the outlay, and that Mr. R. J. Worley was to be associated with him. He himself had made the last-named stipulation, because Mr. Worley was the architect engaged by Grey (Robertson's brother) for the corner building, the restaurant. Mr. Worley's sketch elevation for the building was adopted by Mr. Villiers, and he (Saunders) therefore arranged that Mr. Worley should have a part of his (Saunders's) professional remuneration and be called "joint-architect." He paid Mr. Worley 150 guineas. Mr. Worley was not engaged merely that his name might appear on the plans for the building which had to go before the Board (later on, the witness said that Mr. Worley was pressed upon him). He did not know then that Robertson had anything to do with the corner building. His commission on the cost of the London Pavilion was 1,800*l.* or 1,900*l.* Out of that he paid 150*l.* to Mr. Worley, and 200*l.* to Mr. Woodward, an architect and surveyor who had introduced him to Mr. Villiers. He (witness) was associated with Messrs. Francis as architect of the Grand Hotel, and of the Hôtel Métropole. He advised Mr. Gordon, the purchaser of the site of the Hôtel Métropole, as to the price he should offer for it to the Board. It was an understanding between him and Mr. Gordon that he (Saunders) should be the architect of the hotel. Messrs. Francis prepared the plans jointly with himself. The plans submitted to the Board did not bear his name. He and the Messrs. Francis shared the commission, he taking half and Messrs. Francis the other half. He was a member of the Royal Institute of British Architects, but did not recollect the passage in the late Mr. John Whichcord's address as President of the Institute in 1879, which was to the effect that a Fellow or an Associate of the Institute, who became a member of the Board of Works, ought to cease from that moment to have any professional connexion with the purchase of land offered for sale or let by the Board, nor should such member be professionally engaged in the superintendence of buildings erected upon land which is the property of the ratepayers whose representative he was. It was, no doubt, correct to say that, if Mr. Pyke's offer for the Pavilion site had been accepted, some one else would have been the architect for the building, but he took no part in the proceedings of the Board when that offer was discussed. As a practising architect and surveyor, he gave no information to his clients as to the price required for land which was not open to any other member of the profession who was not a member of the Board. He had been consulted as architect by Messrs. Spiers & Pond with regard to alterations at the Criterion Theatre, and received a fee of 100 guineas for his services. At the same time he was a member of the Theatres Committee of the Board, who would have to approve of the proposed alterations. Asked by Mr. Grain, one of the counsel representing the Inquiry Committee, Mr. Saunders said that during the last four or five years he had received, as architect of buildings built upon Metropolitan Board sites about 5,700*l.*, made up as follows:—Pavilion, 1,800*l.*; Grand Hotel, 2,500*l.*; Hôtel Métropole, 1,200*l.*; Colonial Institute, 100*l.*; Criterion Theatre, 100*l.* Asked as to an action brought by Messrs. Isaacs & Florence against Mr. Villiers for professional services in regard to the Pavilion, Mr. Saunders said that the action was compromised, and he, at the suggestion of Goddard, paid the costs.

Mr. William Pett, a builder and contractor, deposed to extensive money transactions with Robertson, and to the fact that he had been employed by the Board to do work amounting to from 2,000*l.* to 5,000*l.* or 6,000*l.* a year. This work was done at a schedule of prices. He was associated with Robertson and Grey in regard to the Piccadilly Restaurant.

Mr. Francis Hayman Fowler, F.R.I.B.A., of the firm of Fowler & Hill, said he had been a member of the Board for twenty years, and served on the Theatres Committee and Building Act Committee. His firm were architects for the Avenue Theatre, built on a Board site. He had also been architect for other buildings erected on Board sites. His name did not appear on the plans of the Avenue Theatre sent in to the Board. He did not know why; such an omission was very unusual. He never advised clients as to the prices to be offered for Board sites, nor did he advise other architects as to the plans they should submit to the Board.

Mr. Lewis H. Isaacs, M.P., F.R.I.B.A., senior partner in the firm of Isaacs & Florence, architects, said that his firm acted in the first instance as professional advisers to Mr. Villiers in regard to the London Pavilion. After the negotiations had made some progress, Mr. Villiers told him that he had been compelled to engage the services of Mr. Saunders, a Member of the Board, in order to facilitate the rapid passing of the plans through the Board. He afterwards commenced an action against Mr. Villiers, but ultimately he arranged with Goddard to settle the action for 100 guineas damages and 25*l.* costs. He had had no pecuniary transactions whatever with Robertson.

Mr. Robert James Worley, architect, Cannon-street, said he was introduced by Robertson to Grey, and by Grey he was appointed architect for the Piccadilly Restaurant. He was in Mr. Villiers's office when Mr. Saunders's plans arrived. Mr. Villiers did not approve of Saunders's elevation, which was too much like that of Mr. Whiteley's premises at Bayswater, of which Saunders was architect. At Mr. Villiers's suggestion he (Worley) made sketches for the elevations, which were practically the same as those of the elevations actually carried out. As he was architect for the Restaurant, and as his fees in respect of that would be 1,000*l.*, and as the elevations of the Pavilion were merely extensions or prolongations of the restaurant façade, he thought that 150 guineas would pay him for his services in that respect. This sum was not paid to him for merely putting his name to the plans. Saunders had nothing to do with the exterior of the Pavilion. He (Worley) was entirely responsible for that, and made all the details. His fees for work in connexion with the restaurant were paid by cheques all drawn by Grey, not one by Robertson. He (Worley) had nothing to do with the interior of the music-hall.

Mr. Frank Statham Hobson was called and gave evidence as to the extensive transactions he had had with regard to Board sites. He had also had several pecuniary transactions with Robertson personally. He had made Robertson "presents," and had had transactions with Grey. He gave "presents" of 100*l.* and 250*l.* to Robertson because Robertson "gave him very good advice."

Mr. Augustus Harris was called, and spoke of the difficulties he experienced in getting definite information as to the requirements of the Board in regard to theatres. He also produced a number of letters from Mr. Hebb, the Assistant Architect of the Board, asking for orders of admission for boxes and stalls.

Mr. Charles John Phipps, architect, was called and gave evidence as to his transactions with Mr. Fowler and Mr. F. Statham Hobson. He said he had retained Mr. Fowler to advise him as to questions of ancient lights in regard to a Board site in Shaftesbury Avenue, in which Mr. Statham Hobson was interested. He promised Fowler 200*l.* remuneration for that. He knew that Mr. Fowler was a Member of the Board of Works. Ultimately he obtained a cheque for 200*l.* from Hobson and gave it to Fowler. He had had no other pecuniary transactions with Fowler with regard to Board property.

We have no space to go into the remarkable disclosures made in the course of Mr. Villiers's evidence. Mr. Villiers produced a number of letters from Goddard, the Surveyor and Valuer to the Board, and Robertson's immediate superior. Goddard, it is said, has hitherto been too ill to appear before the Commission, and it is reported now that he is insane.* Mr. Villiers swore that he paid Goddard 50*l.* a quarter, or 200*l.* per annum, for six years, and gave him 1,000*l.* in cash and 4,000*l.* in Pavilion debentures. Mr. Charles Dunch, architect, Clement's-lane, was called, and admitted to having been the medium by which these quarterly payments were made to Goddard. Villiers gave him (Dunch) the money, and he passed it on to Goddard. Other remarkable evidence was given by Mr. Stimson, an auctioneer who acted for the Board, and who owned to sharing his commissions on Board business with Robertson; and by Mr. James Hartnoll, a builder, who has erected large blocks of artisans' dwellings on Board sites. This witness said that Robertson virtually prepared the plans of these blocks of buildings. He paid Robertson two sums of 500*l.* each, and other sums, amounting in all to more than 1,500*l.* One sum of 500*l.* was in respect of a large block of artisans' dwellings in Goulston-street, Whitechapel, which cost 50,000*l.* to erect. No architect but Robertson was employed, but Robertson's work in that capacity was limited to the preparation of the plans; he did not superintend the erection of the buildings. It was more economical, the witness said, to employ Robertson than an outside architect, whose fees on a building costing 50,000*l.* would be 2,500*l.* (!) Other witnesses testified to similar payments to Robertson.

* At the meeting of the Board to be held a few hours after this number of the *Builder* is published, the Works and General Purposes Committee of the Board will bring up a report recommending Goddard's dismissal.

SALES OF BUILDING LAND.

Clapham Junction.—At the Auction Mart, on Tuesday, Messrs. Chinnock, Galsworthy, & Chinnock submitted to competition a freehold building estate, embracing an area of a little over six acres, situated within a few minutes' walk of Clapham Junction Railway Station, on the slope of Lavender Hill, having 438 ft. frontage to Wandsworth-road, and 480 ft. frontage to Latchmere-road, with space for another road, which would give two new frontages of a like measurement to Latchmere-road, and further frontages to new roads which could be made. The property was offered in one lot to give the buyer the opportunity to develop his own scheme. The first offer for the property was 15,000*l.*, and it was ultimately sold for 26,400*l.*, being at the rate of nearly 4,500*l.* an acre.

Colchester.—On Monday last Messrs. Baker & Sons submitted to competition, at the Cups Hotel, Colchester, seventy-six plots of freehold building land, being a portion of the Military-road Estate, Colchester. The plots offered included a commanding hotel site, and several villa and shop plots, having the advantage of frontages to several roads, including Military-road, Winchester-road, Albion-grove, and Myrtle-grove. There was an active demand for the several lots, which were all rapidly sold, the plots having frontages of 20 ft., and depths of 100 ft., realising about 30*l.* each; whilst for some large plots, having frontages of 25 ft. and 30 ft., 45*l.* and 50*l.* per plot was obtained. The hotel plot, having a frontage of 40 ft. and a depth of 100 ft., was sold for 210*l.* The total proceeds of the sale amounted to 2,640*l.*

Teddington.—On Saturday last Mr. Richard J. Collier offered for sale, at the Clarence Hotel, Teddington, a quantity of freehold building land having frontages to the high road to Kingston, and also to Kingston-lane. The property was submitted in sixty-eight lots, nearly the whole of the lots having frontages of 20 ft. and an average depth of about 135 ft. There was an active demand for the several lots, a large proportion being sold at prices varying from 35*l.* to 38*l.* each. Three lots having frontages of 25 ft. were sold for 44*l.* 10s. each. A triangular lot, having a frontage of 214 ft. to Kingston-road, and a depth of about 267 ft., realised 275*l.*, whilst a corner lot, having a frontage of 150 ft. to a side road leading from Kingston-lane to Kingston-road and a depth of about 118 ft., was sold for 138*l.*

"DRY ROT" AGAIN.

SIR,—Eighteen months ago I added a wing to my house, consisting of drawing and billiard rooms on the ground floor, with bedrooms over. To-day the builders are engaged in taking out the upstairs floors and joists, several of the latter in this short space of time having rotted almost through. The fungus growth appears to have started where the joists are fixed into the walls (the latter are 14 in. thick, and cemented outside), and seems to have eaten into the mortar.

Will any of your readers kindly give me the benefit of their experience, and tell me how to account for it? I am told it is unprecedented on the first floor.

The work was done under the superintendence of an architect, and was considered first-class. How, in restoring the work, can I best insure the non-appearance of the dry-rot in the new wood?

So far as I can tell, the dry-rot is confined to the bedroom floors. G. F. T.

"ILLEGAL REMUNERATION OF TOWN SURVEYORS."

SIR,—In the law report of your last issue, copied from the *Times*, in the case of Whiteley *v.* Barley, you have repeated the same error which that paper has fallen into, viz., "The action was brought against the Town Surveyor of the Corporation of *Margate* to recover penalties under the Public Health Act, 1875 (section 193)."

As this statement is totally incorrect,—the action referring to the Surveyor of the Corporation of *Ramsgate*, and not Margate, and as the result of this appeal implies the forfeiture of the position, and carries an ineligibility to hold public office in the future, will you kindly make this correction, or otherwise the report may be damaging to me?

ALBERT LATHAM, M.INST. C.E.,
Borough Engineer and Surveyor.

Margate, 9th June, 1888.

[We regret that we did not detect the mistake in question.—ED.]

The Student's Column.

IRON.

XXIV.—PILLARS.

THE strength of very long pillars does not depend upon the strength of the material, but upon the modulus of elasticity (E), which denotes stiffness or resistance to bending. This bears out the experimental result that a short cast-iron pillar will bear a much greater load than a wrought-iron pillar of the same dimensions, because the crushing strength of cast-iron is much greater than that of wrought-iron, yet a pillar of wrought-iron over 26 diameters in length will be stronger than a cast-iron pillar of the same dimensions, because the modulus of elasticity of wrought-iron is greater than that of cast iron. It will be seen from the equation $D = \frac{\lambda l}{8d}$, given in our last article, that the deflection will be proportional to λ, or in proportion to f, the unit stress on the material.

From the equation $W = \frac{M}{D}$ (also given in the previous article), it will be seen, since M also varies in proportion to f, that w, the weight on the pillar, is the same whether the elasticity is small or great, and this proves Mr. Hodgkinson's statement that the weight which produces any deflection in a pillar is very near the breaking weight.

Let fig. 1 represent a pillar bent by the weight w, then if we take moments round the centre of compression, or concave side, the tension multiplied by its leverage, acting downwards, will equal the weight multiplied by its leverage, also acting downwards, so that the compressive side has to bear a vertical load equal to both; that is, putting C = compression, and T = tension, we have C = T + W. We shall, therefore, get a greater stress in the compressive side of the pillar, and can often pretty well anticipate which side a pillar will fracture first.

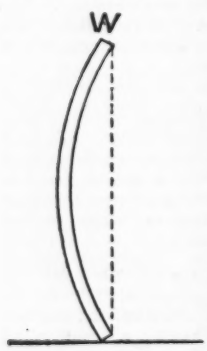


Fig. 1.

As previously stated, our knowledge of the theory of pillars is not so satisfactory as could be desired, but the investigation of the subject by Mr. Hodgkinson has enabled us to calculate their strength with sufficient accuracy for all practical purposes.

Pillars are divided by Mr. Hodgkinson into three classes: short pillars, long flexible pillars, and medium or short flexible pillars. Short pillars, whose lengths are small compared with their external dimensions, will fail by the actual crushing of the material, and by knowing the unit crushing strength we can easily arrive at the breaking weight. Long flexible pillars, about which we have already treated, will fail by flexure.

Medium or short pillars will fail partly by flexure and partly by the crushing of the material, and occupy a place between the two former cases.

Pillars may be put in position in three different ways; that is, pillars with both ends round or imperfectly bedded, both ends flat and bedded with accuracy or fixed pillars, and pillars with one end flat and one round. The strengths of similar pillars vary according to the way in which they are put in position. Pillars fixed in position are three times as strong as pillars round at the ends, and the strength of pillars having one end round and the other flat is an arithmetical mean between the two.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

6,152, Portable Buildings. W. P. Thompson.

This invention consists in a system of framework of wood or iron, folding and unfolding without a single piece being detached. Even the side posts are jointed in three or more places and kept straight by two movable sockets, each provided with a pressure link. The houses may be erected without any special knowledge or skilled labour, as the connecting points are jointed and fall by themselves in the required direction. The pieces indicate the position in which they ought to be placed in relation to each other, and the erection does not require the use of any tools: it may easily be done by hand. The operator begins with the lowest joint, and when the framework and ties are put together a very substantial portable building is the result.

8,738, Warming and Ventilating Apartments. S. Reeve.

The fireplace which is the subject of this patent is preferably formed of firebrick at the bottom, back, and sides, with bars in front. In the bottom is a vent to a channel for the supply of fresh air. The space below the bottom is generally closed in by a movable tidy-plate. The firebrick back is carried high up and supports a "filter" chamber enclosing asbestos. A hood is provided for the front, and the products of combustion pass up and through the asbestos filter-box, which retains the denser portion, but any excess of smoke, &c., generated, say at first lighting, will pass up between the hood and the filter-box.

9,084, Preventing Escape of Sewer-gas. J. Warburton.

This invention consists of a system of exhaustion by fans, and destruction by furnaces; the foul air being made to pass through the fire, which also may serve for exhausting the sewers in the same way that furnaces are used in coal mines.

12,036, Glazing. T. R. Shelley.

This invention relates to a manner of securing sheets of glass so as to form a perfectly dry roofing, full allowance being made for collecting condensed moisture that may gather on the underside of the glass. A wrought-iron T or other shaped bar is used as the astragal, the bar being placed with the T-part uppermost and the web downward, while on the upper side of the tie is laid a piece of metal, zinc, copper, &c., which has three transverse corrugations, the outside one not quite so high as the centre one; the outer edges of the outside corrugations are continued down, and the metal turned round the table, and it then grips the side of the web of the T with a small curl at the end of the same for appearance, and to catch the condensed moisture. The glass is laid on the outside corrugations, and a cap fixed over the centre one, pressing down the glass. This cap is fastened by screws.

4,632, Tiles. H. A. Cawkwell.

According to this invention, one or more ribs are formed on the back or under surface of the tiles; the edges of the ribs being undercut so as to form them into a dovetail section, while longitudinally they taper towards one end of the tile. These ribs form keys which firmly secure the tiles in their bed, and from the ribs being tapered lengthwise, it allows of one being taken out and relaid without disturbing those at its sides.

4,747, Hinges. V. D. A. Lemaire.

The hinges which are the subject of this patent are adapted for swing-doors, leaves of screens, sashes, flaps, and other articles requiring to be close folded, or to open or shut either way. The hinges are made in toothed segments, which work one in with the other, the small wheels or segments being placed between two plates.

NEW APPLICATIONS FOR PATENTS.

June 1.—8,004, D. Gill, Wind-guards for Ventilating Shafts and Chimney.—8,007, A. Dichmont, Combined Sliding Sash and French Window.—8,011, W. Clayton, Draught-proof Reversible Window.—8,020, S. Turner, Roof Tile.—8,040, B. Robinson, Water-closets.

June 4.—8,077, G. Emmerechts, Stoves.—8,101, M. Syer, Indicating Door-latch for Lavatories, Water-closets, &c.—8,115, A. Sharp, Door Handles.—8,133, G. Harvey, Stench Traps.—8,164, W. Walker and Others, Raising and Lowering and Locking Mechanism for Window-sashes.

June 5.—8,173, W. Phillips and C. Tomlinson, Rebated Weather Bar.—8,199, G. Withycombe, Self-acting Flushing Tank, &c.

June 6.—8,245, G. Anslow, Locks and Latches for House Doors.—8,256, C. Jungst, Cutting Clay for Floor Tiles, &c.—8,266, F. Burton and J. Robertson, Window Fastener.—8,268, F. Wakefield and W. Worth, Mitreing Mouldings, &c.—8,270, C. Ellis, Ventilators.—8,281, C. Hibbs, Automatic Water Waste-preventer for Flushing and other Cisterns.—8,285, L. Phillips, Nails.—8,296, E. Edwards, Door Locks.

June 7.—8,309, J. Mulligan, Chimney or Ventilating Caps.—8,313, P. Walker, Ventilating Rooms and Buildings.—8,320, P. Haddleton, Cleaning and Painting Dome Ceilings without the Aid of Scaffolding.—8,323, H. Wells, Screw Nails.—8,338, H. Lansbury, Weather-bar for Doors and Windows.—8,347, F. Lebacq, Paint Remover.

PROVISIONAL SPECIFICATIONS ACCEPTED.

6,712, J. and B. Craven, Machines for Pressing Bricks, &c.—7,086, W. Creed, Fan Ventilator.—7,120, H. Summers, Fireproof Curtain for Proscenium Opening in Theatres.—7,190, J. Cropper, Flushing Water-closets.—7,211, I. Hawkins, Construction of Sewers.—7,288, J. Phillips, Gullies and Drains for Streets, &c.—7,406, E. Sharp, Water-closets, &c.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

10,608, F. Hemming, Wood Veneers.—10,762, W. Lewis, Fireclay, Terra cotta, or Fire-brick Domestic Fireplaces.—10,764, F. Stokes, Drying Cements, Slurry, &c.—11,744, T. Crook, and W. Ormrod, Brickmaking Machines.—11,829, W. Crozier, Locking Sash Fastener.—13,342, R. Platt, Window Sash Fastener.—14,990, J. Knight, Metallic Reversible Tread for Steps, Stairs, and Manhole and Handhole Covers in Roads and Pavements.—373, G. Pratt, Water-waste Preventer.—4,947, T. Bailey, Fireproof Partition, Ceiling, Roof, &c.—6,499, W. Kinnear, Metallic Ceilings.—6,791, G. and S. Jennings, Device for Fixing the Trunnions of Basins used in Tip-up Lavatories, &c.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

MAY 29.

By MESSRS. COBB (at Ashford).

New Romney, Kent—Gun House, and 0a. 2r. 26p., freehold	£520
Freehold house and shop in Tritton's-lane	150

JUNE 4.

By FURBER, PRICE, & CO.

Harrow-road—4, 6, and 8, Brindley-street, 56 years, ground-rent £15	715
27 and 49, Brindley-street, 56 years, ground-rent £10	500
46, Alfred-road, 61 years, ground-rent £5	280

By VENTOM, BULL, & COOPER.

Highbury—19, Courtney-road, 75 years, ground-rent £8	360
Ramsgate, Margate-road—Two enclosures of land, 24a. 2r. 20p., freehold	3,000

By D. J. CHATTELL.

Wandsworth-road—Ground-rent of £18, term 37 years	295

By E. RICHARDS & CO.

Sydenham—An improved rental of £100, term 37 years	1,275

By T. WAKEFIELD.

Paddington—18, Cambridge-place, 33 years, ground-rent £6	470
Camberwell—24, 26, and 28, Coldharbour-lane, 4 years, ground-rent £15	120
1 to 14, Coldharbour-place, 35 years, ground-rent £56	1,660
A plot of nursery land, 44 years, ground-rent £1. 15s.	115
Walham Green—19, Epirus-road, 92 years, ground-rent £7	225

By J. HIBBARD.

Lower Clapton—9, Lesbia-road, 95 years, ground-rent, £7. 10s.	335

By H. HAINES & SON.

Isleworth—The freehold residence, Kingsley House, and 2¾ acres	2,700
Woodside, Stroud-road—The Railway Tavern, and 2 and 3, Railway-terrace, 79 years, ground-rent £15	130

JUNE 5.

By TOWERS, WILLIAMSON, & ELLIS.

Regent's Park, 170, Albany-street, 48 years, ground-rent £5. 10s. 8d.	700

By BEAN, BURNETT, & CO.

Turnham Green—103 to 111 odd, Duke-road, 80 years, ground-rent £20	750

By G. STOCKINGS.

Edgeware-road—No. 77, term 29 years, no ground-rent	1,135
Commercial-road—13, Stepney-causeway, copyhold	470

By A. BOOTH.

Islington—73, Barnsbury-road, 21 years, ground-rent £8	285
115 and 117, Liverpool-road, 11 years, ground-rent £12. 12s.	340
425, Liverpool-road, 16 years, ground-rent £8	170

By DRIVER & CO.

Essex, North Weald—Blueman's Farm, containing 62a. 1r. 10p.	1,050

By RUSHWORTH & STEVENS.

Regent-street—54, Conduit-street, freehold	9,150
Ealing—15, Argyle-road, 82 years, ground rent £8. 10s.	750

By H. N. NEWTON & CO.

Edgeware-road—81 and 83, Seymour-place, 12 years, ground-rent £12	430
26, Brown-street, 12 years, ground-rent £8	190
Earlsfield, Surrey, Inman-road—Four houses in carcase, freehold	900
The reversion to one-ninth part of 25, Cannon-street, E.C., freehold, life aged 67, provided a life aged 36 years survives; and a policy for £500	330

By Messrs. COBB (at Rochester).

Rainham, Kent—The Parsonage, freehold	£580
An enclosure of freehold land, 6a. 0r. 33p.	925
Two enclosures of land, 44a. 0r. 33p., freehold	1,100
Child's Croft, 8a. 2r. 17p., freehold	300
New Brompton, Kent—23, Paget-street, freehold	170
Rainham—Four freehold cottages, and a plot of land	595

By WORSFOLD & HAYWARD (at Dover).

Dover—21, New-street, freehold	110

By E. & H. LUMLEY.

Regent-street—The lease of No. 162, term 11 years	950

By DEBENHAM, TEWSON, & Co.

Hackney Downs, Bodney-road—Ground-rent of £5, reversion in 86 years	125

JUNE 6.

By BUCKLAND & SONS.

Langley, Bucks—Enclosure of land, 2a. 2r. 2p., freehold	340
Windsor, King's-road—Oak Cottage, and about 4 acres, freehold	4,200

By J. A. & W. THARP.

Forest Gate—Ground-rent of £8, reversion in 92 years	170

By INMAN, SHARP, HARRINGTON, & ROBERTS.

Lee—17 to 20, Weardale-road, 78 years, ground-rent £21	600

By BOYTON & PEGRAM.

Balham—11 and 13, Ouseley-road, 95 years, ground-rent £14	830
Heslop-road—The house adjoining Red Lodge, 97 years, ground-rent £7	440
Fulham—68, Marville-road, 88 years, ground-rent £5. 15s.	150

By H. A. HENDERSON.

Hackney—218, Amherst-road, 60 years, ground-rent £10	1,240
Clacton-on-Sea—2, Elson's-villas, freehold	150

By RANDALL, BEARD, & BAKER.

City, Little Britain—Freehold site, area 470 ft.	1,020

By FAREBROTHER, ELLIS, & Co.

Crystal Palace—54, Anerley-road, 65 years, ground-rent £10	1,000
Kensington—2 and 2a, Drayton-mews, 68 years, ground-rent £7. 10s.	1,000

By F. JELLY & Co.

Bow—12, Antill-road, 70 years, ground-rent £4. 5s.	325
Lower Clapton—29, Pembury-road, 62 years, ground-rent £5	1,170
Whitechapel—22, Walden-street, 18 years, ground-rent £2	145
Mile End—171 and 173, Jubilee-street, 12 years, ground-rent £6	250
48 and 50, Bancroft-road, freehold	670

By INMAN, SHARP, & HARRINGTON.

West Norwood, Court-road—The residence called The Clone, 88 years, ground-rent £13	1,200

JUNE 7.

By A. WALTON.

Old Kent-road—38 and 40, Blockhouse-street, 73 years, ground-rent £9	400
Streatham, Pendennis-road—The residence called Ephraim, 69 years, ground-rent £8. 15s.	525

By A. J. ROGERS & Co.

Beckenham, Barnmead-road—The residence called Charnwood, 87 years, ground-rent £5. 10s.	330

By G. NEWMAN.

Tooting Junction—3 and 4, Devonshire-road, 96 years, ground-rent £13	425

By C. P. WHITELEY.

Hammersmith—16, Hammersmith-terrace, copyhold	470
Chiswick—13, William-street, freehold	75
Strand-on-the-Green—South View Cottage, freehold	165
1 and 2, Warrington's-alley, freehold	130
Ground-rent of £8, reversion in 93 years	150
22, Back-lane, copyhold	50
Rotherhithe—11, Elephant-lane, freehold	100
Sutton, Benhill-road—A plot of freehold land	100

By D. YOUNG.

Woolwich—54 to 58, Lower-road, 5 years, ground-rent £18	440
Wandsworth Common—50, 51, and 53, Bolingbroke-road, 89 years, ground-rent £25. 10s.	1,070
Clapham-road—No. 206, term 14 years, ground-rent £11. 11s.	160

By HOBSON, RICHARDS, & Co.

Dalston—2, Laburnham-grove, 63 years, ground-rent £3. 15s.	215
1 and 2, Massie-road, 63 years, ground-rent £6. 6s.	565
Hackney—Improved ground-rent, £38. 16s., term 50 years	620
Ground-rents of £12, reversion in 88 years	311

By E. STIMSON.

Newington Butts—38, Newington-crescent, freehold	635
West Norwood, Thurston-road—The freehold house, Alton	295
Old Kent-road, Maskdyke-street—Two blocks of model houses, 74 years, ground-rent £36	1,700
Westminster Bridge-road—11 and 12, Philadelphia-terrace, 16 years, ground-rent £20	250
Brixton—21 and 23, Crowhurst-road, 64 years, ground-rent £10. 8s.	790

By NEWBON & HARDING.

Clerkenwell—15, 17, and 19, St. James's-walk, freehold	2,065
2 and 9, St. James's-street, freehold	3,815
Islington—7, 9, 17, 21, and 27, King Henry's-walk, freehold	2,200
Chancery-lane—18, Took's-court, freehold	1,150
Crouch Hill—21 and 23, Sparsholt-road, 58 years, ground-rent £11	480
Caledonian-road—23, Twyford-street, 53 years, ground-rent £6	305
2, Thornhill Bridge-place, 43 years, ground-rent £7	225

JUNE 8.

By J. WILSON.

Bayswater—Ground-rent of £5, term 90 years	90

By DOLMAN & PEARCE.

Haverstock Hill—144, Prince of Wales-road, 56 years, ground-rent £5	350
8, Maitland Park-road, 63 years, ground-rent £8	450
Belsize Park—7, Chalcot-gardens, 76 years, ground-rent £2	1,260

By H. RUTLEY.

Euston-road—93 and 94, Chalton-street, 39 years, ground-rent £32	1,000
Highgate-road—28, Lady Somerset-road, 91 years, ground-rent £7	645
Burghley-road—Leasehold stabling, 91 years, ground-rent £1	250

By WEATHERALL & GREEN.

Battersea, Stewart's-road—A plot of freehold land	£2,120

By BAKER & SONS.

Bognor—Felpham House and 3¼ acres freehold	1,700
The manorial rights of the parish	120
Bermondsey Wall—Porter's Granary, freehold	1,200
Tottenham, Hermitage-road—A plot of freehold land	160
Raynes Park, Grand Drive—Four plots of freehold land	317

By NORTON, TRIST, & GILBERT.

Hook—Three freehold houses	2,040

By COLLINS & COLLINS.

Enfield, Upper Gordon-road—A plot of freehold land	140
Camden-road—21 and 21a, Little Randolph-street, freehold	860
Ground-rent of £15. 15s., reversion in 29 years	350

By ROGERS, CHAPMAN, & THOMAS.

Pimlico—25, Rutland-street, 36 years, ground-rent £8	505
Wandsworth Common—122 to 128 even, Trinity-road, and stabling, freehold	1,400
Pimlico—55, Wilton-road, freehold	2,160

By R. REID.

Bucks, part of the Chalfont Park Estate—Lambscroft Farm, and 27a. 2r. 13p., freehold	1,120
Numerous enclosures of land, containing 21a. 3r. 2p., freehold, and houses and cottages	2,593

MEETINGS.

SATURDAY, JUNE 16.

Architectural Association.—Visit to Bramshill, Hampshire. Party to meet in the Booking-office, Waterloo, 9·30 a.m.

TUESDAY, JUNE 19.

Statistical Society.—Major P. G. Craigie on "The English Poor Rate: Some Recent Statistics of its Administration and Pressure." 7·45 p.m.

WEDNESDAY, JUNE 20.

Artists' Benevolent Fund.—Seventy-ninth Anniversary Dinner. The President, the Earl of Derby, in the chair. Freemasons' Hall. 7 p.m.

Builders' Foremen and Clerks of Works' Institution.—8·30 p.m.

Royal Meteorological Society.—Three papers, including the "First Report of the Thunderstorm Committee, on the Photographs of Lightning Flashes," drawn up by the Hon. Ralph Abercromby. 7 p.m.

THURSDAY, JUNE 21.

Society of Antiquaries.—8·30 p.m.

SATURDAY, JUNE 23.

Glasgow Architectural Association.—Visit to Largs and Millport.

Miscellanea.

British Archæological Association.—The closing meeting of the session was held on June 6th, the Rev. Prebendary Scarth in the chair. The progress of the arrangements for holding the Congress at Glasgow in August next were detailed. Mr. R. S. Ferguson, F.S.A., reported the discovery of a portion of a sculptured slab in excavations on the site of the new market, Carlisle. Two figures of the Deæ Matres remain on it in perfect preservation. A plain altar was also found, and the socket into which it had fitted. Mr. Loftus Brock, F.S.A., read a letter from the Town Clerk of Christchurch, denying that the Corporation of that town had any intention of removing the ruins of the Norman House there. Mr. Roach Smith, F.S.A., exhibited a photograph of a curious iron figure of the Saviour, found near Lancing, now in possession of the Rev. F. Haverfield. Mr. W. Myers, F.S.A., described various antiquities which he had obtained at Perugia and Fiesole. The Rev. S. M. Mayhew produced a large collection of antiquities found for the most part in London in recent years. A paper was then read by Mr. de Gray Birch, F.S.A., in the absence of its author, Mr. Henry Prigg, on the discovery of some late Celtic objects near Elveden, Suffolk. The site of the discovery is the Broom Close Field, 3½ miles from Thetford. A quantity of burnt matter was found in excavating only 18 inches below the modern level. Three urns of fine wheel pottery were met with arranged in the form of a triangle. Among the remains which were clearly sepulchral were many fragments of metal bands, one of which had been covered with late Celtic ornament. Sufficient remained to show that they had formed part of a Situla lined inside and out. A drawing showing the form of the vessel was exhibited. A paper was then read by the Rev. S. M. Mayhew on the Romans at Filey. The Bay of Filey is called Portus Felix by Ptolemy. A Roman fort existed on the hill not far from the church, and many traces of it were visible after a fall of the cliff a few years ago. Five stone bases socketed for wooden uprights have also been discovered, as well as many other objects which were detailed by the lecturer.

The Albert Palace in the Auction Mart. Like the Alexandra Palace on Muswell Hill, the Albert Palace at Battersea Park has been subject to a series of adverse vicissitudes, and last week it was offered for sale, under a Chancery order in the consolidated actions of Carden *v.* the Albert Palace Association, and Fraser *v.* the same. There was a numerous attendance, the large room at the Auction Mart being much crowded. One of the conditions of the sale was that the fine organ in the Connaught Hall and all the fittings and furniture were to be taken at a valuation. The entire property, covering 10 acres of land, is held on two leases from the Commissioners of Her Majesty's Works, for a term of ninety-one years from 1886, at a ground-rent of 1,425*l.* per annum. Mr. W. J. Hamnet conducted the sale, and stated that from first to last the buildings had cost upwards of 200,000*l.* He observed that the whole of the property was in excellent order, and, looking at the enormous population of Battersea, he was of opinion that under good management there was no reason why it should not be a successful undertaking as a public place of resort in South London. No offer having been made, he stated that he must report to the Court of Chancery that there were no biddings. It was, however, very currently stated in the sale room that a company is in course of formation for the purchase of the property, and that there is a probability of its being shortly re-opened. It has also been proposed that if possible the building should be secured as one of the "People's Palaces" which are now being talked of, and one of which is proposed to be located in this neighbourhood. Its situation on the verge of Battersea Park renders it admirably suited to such a purpose, and we hope that means may be found for giving effect to this proposal.

Roubiliac the Sculptor.—Roubiliac was a native of Lyons, where he was brought up to the trade of stonecutting. Showing considerable taste as well as skill, he devoted himself to the ornamental branch of his craft. Hearing that there would be larger scope for the exercise of his skill in England, he came to London, and was employed by a builder for the ornamental part of the work. One evening he found a purse with gold, and containing the address of the owner, Edward Walpole, Esq., to whom he restored it. Mr. Walpole was touched by the honesty of the workman, and asked him about his occupation. Having made further inquiry, Mr. Walpole got him into the studio of Cheer, a noted sculptor of that day, and he always afterwards patronised the French artist. Having set up for himself as a statuary in St. Martin's-lane, the first work of public interest from the chisel of Roubiliac was a statue of Handel, from a single block of fine white marble. This was purchased by Mr. Tyers, the manager of Vauxhall Gardens, where it was erected, and attracted much notice. It is now in the possession of the Sacred Harmonic Society. This was the beginning of his celebrity. It is remarkable that the latest work from his chisel was the statue of Handel in Westminster Abbey. To have produced the best statues of Handel and of Shakspeare may well entitle Roubiliac to the high place he holds in the records of art.—*Leisure Hour.*

The Railway and Canal Traffic Bill.—The ordinary monthly meeting of the Council of the Railway and Canal Traders' Association was held at Eastcheap-buildings, Eastcheap, last week, Mr. James Duncan in the chair. The position of the Railway and Canal Traffic Bill was considered, and it was reported that Sir Matthew White Ridley, Bart., M.P., a Director of the North-Eastern Railway Company, had been appointed Chairman of the Grand Committee on Trade and Agriculture during the consideration by the Committee of that measure. The Council thereupon unanimously resolved, "That this Council express their great surprise and regret that a railway director (Sir M. W. Ridley, Bart., M.P., a Director of the North-Eastern Railway Company) should have been appointed to act as Chairman of the Grand Committee on Trade during the consideration of the Railway and Canal Traffic Bill by that Committee.

Carved Oak Choir Stalls, &c., from Buxheim.—As will be seen by an advertisement in our columns this week, these stalls, which have already been more than once noticed by us, are to be sold by auction on Wednesday next, the 20th.

Philadelphia.—Dr. Walter Smith, who is at present in America, writes to the *Scotsman* in regard to Philadelphia, as follows:—"It is a fine town, with more buildings of white marble than in any city I have yet seen. The town-hall, which they are now erecting at a cost of some 3,000,000*l.* sterling, is a magnificent structure in the French style, a little too ornate, but still a noble edifice. The roof is its weak point, but roofs are always difficult. The tower, when finished, is to be the highest erection in the world,—higher than Washington's monument, which is over 500 ft.; but I think they are making a mistake in crowning such a tower with a huge statue of William Penn. Independence House, where the charter of American liberty was signed, is not far from this new town-hall, and is more interesting than its showier neighbour is ever likely to be. One looks at the portraits of Washington and Franklin, and Witherspoon and others, their confreres, and on the chairs where they sat and the table on which they signed their bold 'Declaration,' and wonders at the folly of those who drove loyal-hearted men to take a step which was repugnant to their natural feelings, and was only forced on them by the most wrong-headed interference with their rights and liberties. Besides these, Philadelphia has many other things well worth seeing, and especially a magnificent park, which would be, I think, as fine as any in the world if it were not cut up here and there by railways. Altogether it is a great city, with a population, it is said, of nearly a million human beings, full of energy and enterprise as befits the capital of a state so rich in minerals and petroleum as well as in grass and corn."

Frost-proof Mortar.—According to the *Bautechniker*, Herr Heinrich Hausleitner, of Vienna (Meidling, Schulgasse No. 13), by adding a certain substance, renders gypsum, hydraulic lime, and Portland cement perfectly frost-proof. The effect of the addition is that those materials, even during the most severe frosts, set without freezing. The frost-proof materials, which are stated to have been found efficient, are used in the following manner in mixing mortar:—(1) *Frost-proof Gypsum Mortar.*—Three parts of good white lime mortar are well mixed with 1½ or 2 parts of frost-proof gypsum, but the quantity mixed must be used quickly, and the interval from the time of mixing to using the mortar must not exceed ten minutes. (2) *Frost-proof Hydraulic Mortar.*—Three parts of sand are mixed with 1½ part of hydraulic cement lime, the necessary quantity of water is added, and the mortar mixed as quickly as possible, so that from the time of adding the water to the complete using up of the whole quantity of the mortar prepared no more than ten minutes elapse. If it is desired to add frost-proof hydraulic cement lime to white lime mortar, so as to cause the latter to set and resist frost, one part and a half of frost-proof hydraulic cement lime is added to three parts of thin white lime mortar, the whole quantity of the prepared mortar to be used up within ten minutes of the time of adding the frost-proof hydraulic cement lime. (3) *Frost-proof Portland Cement.*—This is treated and used in the same way as frost-proof hydraulic cement lime. The frost-proof materials must be stored in a dry place, for damp causes them to stick to the barrel, and to become worthless for further use.

Discharging Timber Cargoes.—A Christiania correspondent, signing himself "Norwegian Shipowner," writing to the *Liverpool Journal of Commerce*, asks, Is there any regulation in the ports of London or Hull which limits the discharge of timber of any kind to 40 standards per day? To this question the Editor replies as follows:—"Since the introduction of steamers into the timber trade lay hours instead of days are contracted for, and this knocks all old customs on the head. The *Red Jacket* had a cargo of 800 standards, which was discharged in eight days. Steamers are unladen at the rate of about 450 standards in 24 hours. The steamship *Matthew Bedlington*, with 750 standards of deal from Quebec, was docked in the Commercial Dock and discharged in 47 hours. The *Head Quarters*, with 1,400 loads of sleepers, was discharged by lighters in three days. The chairman of the Hull Dock Company stated that 350 standards had been discharged in 29 working hours, and 440 standards in 36 hours. The ancient practice has no longer any force.—ED. *J. C.*"

The New Railway Route to Southend.—The opening of the London, Tilbury, and Southend Railway Company's new route to Southend, which took place last week, is likely to give a considerable impetus to building operations along that portion of South Essex which has, for the first time, had the advantage of railway communication, in addition to materially reducing the distance between the metropolis and Southend by avoiding the circuitous route *viâ* Purfleet and Tilbury. It passes through one of the picturesque parts of the county which has hitherto not been intersected by a line of railway, but the opening of the new line has been anticipated by the erection of several new buildings of a residential character, and a large number of similar structures of a similar character are at present in progress between Barking and Pitsea, which the new line traverses. From Barking to Pitsea the line runs direct from west to east, intersecting that part of Essex about midway between the Great Eastern line on the north side, and the London and Tilbury line on the south side. By the opening of the line the distance between London and Southend is reduced to the extent of about eight miles, and the management has decided that all the express trains to Southend will run *viâ* the new route, performing the journey from London to Southend in from forty to fifty minutes, as against about one hour and a half, which has hitherto been occupied in the journey.

The National Art Association.—The following is the list of officers of the Association appointed at the meeting held at Grosvenor House on Friday, 18th, the Duke of Westminster presiding:—Sir Frederick Leighton, President; the Earl of Derby, Earl of Pembroke, Earl of Wharncliffe, Lord Ronald Gower. Viscount Hardinge, Sir A. H. Layard, Mr. D. Plunket, M.P., Sir Andrew Barclay Walker, Sir John Millais, and Mr. R. S. Holford, Vice-Presidents; Mr. Cuthbert Quilter, M.P., Hon. Treasurer; Professor Conway, Hon. Secretary; Central Committee, Mr. Eustace Balfour, Mr. John Dun (Liverpool Hon. Treasurer), Mr. Cyril Flower, M.P., Mr. Edmund Gosse, Professor Herkomer, A.R.A., Mr. George Howard, Mr. C. Leland, Rev. W. J. Loftie, Mr. A. H. M'Murdo, Mr. Cosmo Monkhouse, Mr. Poynter, R.A., Mr. P. H. Rathbone, Mr. H. E. Rensburg (Liverpool Hon. Secretary), Mr. George Scharf, Mr. R. A. M. Stevenson, and Mr. T. Humphry Ward.

Association of Municipal and Sanitary Engineers and Surveyors.—A Northern District meeting of this Association is to be held at Carlisle on Saturday next, June 23rd. The members will inspect,—(1) The new markets in course of construction. (2) The new slaughter-houses. (3) The police-office alterations. (4) The new baths. At two p.m. there will be a meeting in the Council Chamber of the Town-hall, when Mr. A. T. Walmisley, M.Inst.C.E., will read a paper on "The Roof of the New Markets." Mr. Joseph Hepworth, M.Inst.C.E. will read a paper on "The Carlisle New Baths." Mr. H. U. McKie will read short illustrated papers on the following subjects:—New Public Slaughter-houses; Improvements at the City Police-office; Testing Lazonby and other Flags; Record of House Junctions and Street Gullies; and Muncipal Work in Carlisle.

New Clock for Graique Church, co. Kilkenny.—A new clock has been erected in the parish church tower, Graique. The work was intrusted to Mr. J. W. Benson, London. No cast-iron wheels are used, but the whole of the wheels are of brass, cut by steam machinery. The escapement is Graham's dead-beat. The clock shows the time upon three copper dials, 4 ft. 4 in. in diameter, which are 30 ft. above the clock movement. The hours are struck on a bell of 18 cwt.

A Canal between the Assow and the Black Seas.—The Russian Government has granted a French company a concession for a canal between the Assow and the Black Seas across the Isthmus of Perekop. The canal, which is to be 111 versts in length and 14 ft. in depth, is to be finished in four years, and is in the hands of M. Epson, of Suez Canal celebrity. The company has a capital of 3,500,000*l.*

New House of Parliament in Stockholm.—The Swedish diet has voted a sum of 400,000*l.* towards the building of a new House of Parliament in Stockholm *vis-à-vis* the Royal Palace. In the building the Treasury will also be located.

The National Memorial to the late Emperor.—It is proposed that the national memorial in memory of the late Emperor of Germany should be erected at Hohenstaufen, in Southern Germany, where the ruins of the old castle of that name are situated. Prizes to the amount of 1,000*l.* are to be offered for the best designs for the memorial, the cost of which is estimated at 100,000*l.*

Russian Petroleum for India.—The export of petroleum from Russia to India is steadily increasing, and amounted last year to fifteen cargoes of one million barrels, all of which came from Batoum. One cargo of 75,000 barrels was shipped to Hongkong, but the rest went to Bombay, Calcutta, and Madras. In December alone four cargoes of 250,000 barrels were shipped to Bombay.

The New Museum at Rouen.—Very shortly the new magnificent Museum at Rouen, of which a portion was taken into use in 1880, will be finished and opened. The building, which was begun in 1876 from the plans of M. Sauvageot, will house all the artistic and literary collections found in Rouen, and has cost 150,000*l.*

Study of Sanitary Engineering in Sweden.—The Swedish Government has granted a sum of 1,000kr. to Herr A. M. Isoz, a Swedish engineer, towards the expenses of studying for some months sanitary engineering in this country and Germany.

PRICES CURRENT OF MATERIALS.

TIMBER.	£. s. d.	£. s. d.
Greenheart, B.G. ....ton	6 10 0	7 10 0
Teak, E.I. ....load	8 0 0	12 10 0
Sequoia, U.S. ....foot cube	0 2 3	0 3 0
Birch, Canada ....load	2 15 0	4 15 0
Fir, Dantsic, &c.	2 0 0	4 0 0
Oak ,, ...	2 0 0	4 10 0
Canada	4 0 0	6 10 0
Pine, Canada red	2 10 0	3 10 0
,, yellow	2 10 0	4 0 0
Lath, Dantsic....fathom	3 10 0	5 0 0
St. Petersburg....	5 0 0	6 0 0
Wainscot, Odessa, crown....	2 10 0	3 0 0
Deals, Finland, 2nd and 1st...std.100	8 0 0	9 10 0
,, 4th and 3rd....	6 10 0	7 10 0
Riga	6 0 0	7 10 0
St. Petersburg, 1st yellow	9 10 0	14 10 0
,, 2nd ,, ...	8 0 0	9 0 0
,, white	7 0 0	10 0 0
Swedish....	7 0 0	15 10 0
White Sea	8 0 0	17 0 0
Canada, Pine, 1st	14 0 0	23 0 0
,, ,, 2nd	9 0 0	15 0 0
,, ,, 3rd, &c.	7 6 0	9 10 0
,, Spruce, 1st	8 0 0	9 10 0
,, 3rd and 2nd	6 0 0	7 10 0
New Brunswick, &c.	6 0 0	7 5 0
Battens, all kinds	4 10 0	11 0 0
Flooring Boards, sq., 1 in., prepared, First	0 10 0	0 12 0
Second	0 7 0	0 9 6
Other qualities	0 4 6	0 6 6
Cedar, Cuba....foot	0 0 3½	0 0 4
Honduras, &c....	0 0 3½	0 0 3¾
Australian	0 0 2¾	0 0 3¼
Mahogany, Cuba	0 0 4½	0 0 6
St. Domingo, cargo average	0 0 4½	0 0 6
Mexican ,, ...	0 0 4	0 0 4½
Tobasco ,, ...	0 0 4½	0 0 5½
Honduras ,, ...	0 0 4½	0 0 5½
Rose, Rio ....ton	8 0 0	11 0 0
Box, Turkey	5 0 0	12 0 0
Walnut, Italian ....foot	0 0 4	0 0 5½
METALS.		
IRON—Bar, Welsh, in London...ton	4 17 6	5 0 0
,, ,, at works in Wales ...	4 7 6	4 10 0
,, Staffordshire, London....	5 5 0	7 0 0
COPPER—		
British, cake and ingot..... ton	76 0 0	81 0 0
Best selected	77 0 0	82 0 0
Sheets, strong	88 0 0	0 0 0
Chili, bars	83 0 0	83 10 0
YELLOW METAL....lb.	0 0 7¼	0 0 7½
LEAD—		
Pig, Spanish ....ton	12 5 0	12 6 3
English, common brands	12 10 0	12 11 3
Sheet, English....	13 10 0	13 15 0
SPELTER—		
Silesian, special ....ton	16 10 0	0 0 0
Ordinary brands....	16 0 0	16 5 0
TIN—		
Straits ....ton	81 0 0	0 0 0
Australian	81 0 0	0 0 0
English Ingots....	91 0 0	0 0 0
ZINC—		
English sheet....ton	21 0 0	21 10 0
OILS.		
Linseed ....ton	18 10 0	18 12 6
Cocoanut, Cochin	26 0 0	0 0 0
Ceylon	22 10 0	23 0 0
Palm, Lagos	20 0 0	20 10 0
Rapeseed, English pale	24 10 0	0 0 0
,, brown	23 0 0	0 0 0
Cottonseed, refined	20 15 0	21 0 0
Tallow and Oleine	25 0 0	45 0 0
Lubricating, U.S.	5 15 0	6 0 0
,, refined	7 0 0	12 0 0
TURPENTINE...		
American, in casks....cwt.	1 9 0	0 0 0
TAR—		
Stockholm....barrel	0 15 9	0 0 0
Archangel	0 9 6	0 0 0

CONTRACTS AND PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Sewering & Making-up Roads, Tar-paving, &c.	Hendon Local Board ...	S. S. Grimley	June 18th	xii.
Brick Sewer	Paddington Vestry	*Official*	do.	xi.
Broken Guernsey Granite	Northfleet Local Board	do.	June 20th	xi.
Cast-Iron Water-Pipes	Nelson Local Board.....	Newton & Son.....	June 21st	ii.
Laying Cast-Iron Water-Pipes	Mountain Ash Local Bd.	J. Mansergh	June 25th	xi.
Asphaltic Tar-Paving	Tottenham Local Board	John E. Worth.....	June 26th	ii.
Lamp Columns	St. Mary, Islington, Ves.	*Official*.....	do.	xi.
Proposed Park at Batley	Batley Corporation	do.	June 27th	ii.
Repairs of Roofs.....	Lambeth Guardians.....	do.	do.	xii.
Embankment, River Wall, &c.	Reading Corporation ...	do.	June 30th	xi.
Forming and Making New Roads, Windsor ...	.....	T. V. H. Davison.....	do.	ii.
Sewage Works.....	Atherstone R. S. A.....	B. Latham	do.	xi.
Sewerage Works.....	Ware U. R. S. A.	Ellice-Clark	July 2nd	xi.
Steam Disinfecting Apparatus	Hornsey Local Board ...	T. De Courcy Meade ...	do.	ii.
Main Drainage Works	Belfast Corporation.....	J. C. Bretland	July 4th	ii.
Stables, Fire-Engine House, &c.	Ealing Local Board.....	C. Jones.....	July 5th	xii.
Painting Hammersmith Bridge	Met. Board of Works...	*Official*	July 6th	xi.
Construction of Aqueduct	Manchester Cor. Wtrwks	G. H. Hill.....	July 10th	xi.
Alteration to Coast Defences, Portsmouth.....	War Department.....	*Official*.....	Not stated...	ii.
Painting Works, York	do.	do.	do.	ii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page
Engineer's Assistant	Rawtenstall Local Board	Not stated.....	June 16th	xvi.
Engineer	Cor. of Nottingham.....	300*l.*	June 20th	xvi.
Road Surveyor.....	Leyton Local Board.....	3*l.* per week.....	June 28th	xvi.

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *Noon on Thursdays.*]

ABBOTSKERSWELL (Devon).—For alterations and additions to Whiddon House, Abbotskerswell, near Newton Abbot. Mr. S. Segar, architect, Newton Abbot :—

Parker Bros.	£830 0 0
F. A. Stacey	825 0 0
Mills & Sons (accepted)	805 0 0

[All of Newton Abbot.]

BATTERSEA.—For rebuilding the Old House at Home, Battersea. Mr. Bruce J. Capell, architect :—

Mills Bros.	£1,675 0 0
G. Lymn	1,340 0 0
W. Shurmur	1,296 0 0
Gregory (accepted)	1,157 0 0

BEAULIEU (Hants).—For the rebuilding of The Montagu Arms, Beaulieu, Hampshire, for Messrs. Strong & Co., brewers, Romsey. Mr. W. H. Mitchell, architect, Southampton :—

Brinton & Bone, Southampton	£2,900 0 0
C. Barter, Shirley	2,749 5 0
W. H. Chapman, Woolston	2,719 0 0
H. J. Sanders, Southampton	2,660 0 0
Stevens & Sons (accepted)	2,567 0 0

BIGGLESWADE (Beds).—For alterations and enlargement of the Town-hall, for the Town-hall Company :—

Twelvetrees, Biggleswade (accepted)	£798 0 0

COPDOCK (Suffolk).—For the erection of a small homestead at Copdock, for Mr. Hugh Turner. Messrs. John S. Corder and Frank Brown, joint architects :—

W. Grayston (accepted)	£275 0 0

DOVER.—For additions, &c., to warehouses, Queen-street, Dover, for Messrs. Richard Dickeson & Co., Mr. Edward W. Fry, architect, St. Martin's-road, Dover. Quantities supplied by the architect :—

Richardson	£1,348 0 0
Adcock	1,270 0 0
Bromley	1,237 0 0
Stiff	1,225 0 0
Dowle (accepted)	1,197 12 0

DUBLIN.—For erecting new buildings for the Alexandra School, Earlsfort-terrace, Dublin, for the Council of the Alexandra College. Mr. W. Kaye Parry, M.A., architect, 42, Dame-street, Dublin. Quantities by Mr. T. C. Antisell, Morehampton-road, Dublin :—

Henry Sharpe	£5,800 0 0
Geo. Whiteacre & Sons	5,377 0 0
Thos. Tighe & Sons	5,300 0 0
Sir Geo. Moyers	5,250 0 0
J. & W. Beckett	5,200 0 0
J. Pemberton & Son	4,970 0 0
Thos. Wardrop & Sons, Dublin*	4,810 0 0

* Plans modified and tender accepted at £4,011.

DUBLIN.—For making additions to No. 12, Earlsfort-terrace, Dublin, for the Irish Clergy Daughters' School. Mr. W. Kaye Parry, M.A., architect. Mr. T. C. Antisell, Surveyor :—

J. & W. Beckett	£1,425 0 0
Thos. Wardrop & Sons	1,395 0 0
James P. Pile	1,307 0 0
J. Pemberton & Son, Dublin*	1,243 0 0

* Accepted.

EAST DULWICH.—For restoring after fire, at 12, Lordship-terrace, Lordship-lane, East Dulwich, for Mr. J. W. Crouch :—

Thos. Watson, Dulwich	£225 0 0

[No competition.]

GLOUCESTER.—For the erection of the Gloucester Public Baths. Mr. J. Fletcher-Trew, architect, Gloucester :—

	Original Tender.* General Estimate.	Revised Tender.† General Esttmate.
King Brothers	£9,989 0 0	£7,482 0 0
Claridge & Bloxham	9,684 0 0	8,021 0 0
Henry A. Forse	9,600 0 0	7,850 0 0
William Jones	9,353 0 0	7,582 0 0
William Bowers & Co.	9,345 0 0	7,990 0 0
Stephens, Bastow, & Co.	9,256 0 0	7,895 0 0
John Inwood	9,000 0 0	7,617 0 0
A. J. Beaven	8,960 0 0	7,560 0 0
W. Lean & Son	8,909 11 4	7,485 10 8
D. C. Jones & Co.	8,887 0 0	7,174 0 0
John Shillitoe & Son	8,886 0 0	7,597 0 0
William Cowlin & Son	8,883 0 0	7,349 0 0
W. Storrs, Sons, & Co., Limited, Stalybridge	8,499 0 0	7,065 0 0

* The original tenders include £1,400 for engineering work and 5 per cent. for contingencies on several trade items.

† The revised tenders include only £1,150 for engineering work, and omit the percentage for contingencies.

HACKNEY.—For the erection of five houses and shops at Well-street, Hackney. Messrs. Hammack & Lambert, architects :—

S. J. Scott	£7,543 0 0
F. & F. J. Wood	7,063 0 0
W. Shurmur	6,930 0 0
J. H. Johnson	6,855 0 0
T. Boyce	6,790 0 0
Sargeant	6,757 0 0
C. Cox	6,486 0 0

HAMPSTEAD.—For additions, alterations, and repairs, for the Committee of Christ Church Schools, Hampstead. Mr. C. A. Legg. F.R.I.B.A., architect, Denning-road, Hampstead. Quantities by Mr. W. Hawker, Gracechurch-street, E.C. :—

	Additions, &c.	Repairs.
Tugwell & Son, Hampstead	£898 0 0	£95 0 0
King, Hampstead	756 0 0	109 0 0
Burford & Son, Hampstead	744 0 0	98 0 0
Hudson, Hampstead	737 0 0	129 6 0
Shepherd, Bermondsey	695 0 0	120 0 0
Wall Bros., Kentish Town	649 0 0	97 0 0
Pearce, Hampstead*	579 16 0	91 2 0

* Accepted.

HARTON.—For the completion of the new cemetery building, and boundary-walls, Harton, for the South Shields and Westoe Burial Board. Mr. Henry Grieves, A.R.I.B.A., architect, South Shields. Mr. George Connell, quantity surveyor, Newcastle-on-Tyne :—

Jos. Elliott, North Shields	£6050 0 0
D. Laws & Co., South Shields	5,875 9 10
Robt. Allison (accepted)	5,663 11 1
R. Goodwin & Son	5,442 9 5½

LONDON.—For paving the carriageway, Rotherhithe-street, with new 4-in. by 7-in. Guernsey granite cubes, and reforming the footways, for the Vestry of Rotherhithe :—

Mowlem & Co.	£647 0 0
Turner & Son	583 0 0
Rutty	559 0 0
Woodham & Fry	532 0 0
Etheridge	525 15 0
W. H. Wheeler	492 0 0

LONDON.—For the rebuilding of the Grand Theatre, Islington, for Mr. Charles Head. Mr. Frank Matcham, architect. Quantities supplied by Mr. Frederick Thomson :—

	Main Building.	Front portion.
Holliday & Greenwood	£9,300 0 0	£995 0 0
Dove Bros.	8,989 0 0	1,165 0 0
Kirk & Randall	8,750 0 0	813 0 0
Shurmur	8,700 0 0	777 0 0
Morter	8,693 0 0	1,295 0 0
Wall Bros.	8,629 0 0	797 0 0
Toms	8,539 0 0	763 0 0
Lamble	8,462 0 0	889 0 0
Patman & Fotheringham	8,354 0 0	1,237 0 0
G. H. & A. Bywaters*	7,960 0 0	737 0 0

Accepted for both,

LONDON.—For alterations and repairs, shop-fittings, and gas-fittings, at 173, Wandsworth-road, for Mr. C. Lockyer. Mr. H. W. Budd, architect :—

Alterations, &c.

Bush	£239 0 0
Chappell	228 0 0
Prestige & Co.*	219 0 0
White	197 2 0

Shop Fittings.

Chappell	396 0 0
Sage	385 0 0
Drew & Cadman	363 0 0
Bush	343 0 9
Prestige & Co*	333 0 0

Gas Fittings.

Sugg	78 7 6
Chappell	65 0 0
Bush	61 0 0
Prestige & Co.*	54 10 0
Sage	36 15 0

* Accepted.

LONDON.—For new shop-front, &c., for Messrs. Harriss, 1, West Smithfield, E.C. Mr. H.W. Budd, architect :—

Lamble	£181 0 0
Morter	167 0 0
Lister & Co.	155 0 0
Chartris	153 0 0
Bush	143 0 0
Chappell	130 9 0
Prestige & Co. (accepted)	117 0 0

LONDON.—For erecting w.-c. projections and additions to lunatic ward at the Whitechapel Union Infirmary, for the Guardians of the Whitechapel Union. Mr. Bruce J. Capell, architect, 70, Whitechapel-road. Quantities by Mr. Max Clarke, 2, John-street, Bedford-row :—

	W.C. Wings.	Alterations to Lunatic Ward.	Total
	£ s. d.	£ s. d.	£ s. d.
Thos. Linfield	1,506 0 0	174 0 0	1,680 0 0
W. Goodman	1,464 0 0	149 0 0	1,613 0 0
T. Pearce	1,400 0 0	140 0 0	1,540 0 0
W. Catmur	1,412 13 0	106 0 0	1,518 14 0
C. Robson	1,399 0 0	115 10 0	1,514 10 0
Ward, Clarke, & Co.	1,379 0 0	126 0 0	1,505 0 0
Chas Cox	1,380 0 0	116 0 0	1,496 0 0
F. & F. J. Wood	1,373 0 0	118 10 0	1,491 10 0
S. Grist	1,348 0 0	140 0 0	1,488 0 0
A. Doughty	1,330 0 0	141 0 0	1,471 0 0
Scharien & Co.	1,352 2 2	110 5 0	1,462 7 2
King, Bros.	1,327 0 0	119 0 0	1,446 0 0
W. Shurmur	1,310 0 0	108 0 0	1,418 0 0
J. Edmunds	1,278 0 0	120 0 0	1,398 0 0
W. Gladding	1,287 0 0	104 0 0	1,391 0 0
J. Loveday	1,275 0 0	90 6 0	1,365 6 0
Tarrant	1,229 14 3	103 2 0	1,332 16 3
J. R. Hunt	1,225 0 0	102 0 0	1,327 0 0
Gilbey & Sons	1,119 10 0	165 8 0	1,284 18 0

LONDON.—For alteration to bar and additional cellarage to the Fox public-house, Upper Holloway, N., for Mr. W. J. Jennings :—

Norris & Luke (accepted)	107 0 0

[No competition.]

POPLAR—For the erection of Trinity Sunday School, &c., East India-road, Poplar. Messrs. Spaulding & Auld, architects :—

J. Holland	£4,350 0 0
J. Woodward	4,315 0 0
Neave & Neave	4,288 0 0
Atherton & Latta	4,210 0 0
Carter & Son	4,185 0 0
W. & H. Castle	4,149 0 0
Gould & Brand	4,147 0 0
Owthwaite & Son	4,107 0 0
Hearle & Son	4,099 0 0
Harris & Wardrop	4,040 0 0
Holloway Bros.	4,000 0 0
W. Shurmur	3,996 0 0
J. Holloway	3,955 0 0

RICHMOND.—For the partial erection of stabling, and sundry repairs, in Friars-lane, for Mr. C. D. Hodgson. Mr. T. C. Barralet, Bridge-chambers, Richmond, architect, Quantities supplied :—

Gaze, Kingston	£329 0 0
Bates, Barnes	270 0 0
Soule & Son, Richmond	245 0 0
Carman, Richmond	244 0 0
Hickinbottom, Teddington	240 0 0
Judd, Kingston	232 0 0

ROMSEY.—For the erection of limekilns at the Pumping Works, at Michelmersh, near Romsey, for the South Hants Water Works Company. Mr. W. H. Mitchell, architect, Southampton :—

T. J. Jukes, Southampton	£279 10 0
Stevens & Sons, Southampton	273 0 0
Geo. Wheeler, Romsey (accepted)	240 0 0

SOUTHAMPTON.—For the erection of a new boys' school, at Eastleigh, near Southampton, for the South Stoneham School Board. Mr. W. H. Mitchell, architect, Southampton :—

W. Franklin, Southampton	£1,249 10 0
Crook & Sons, Southampton	1,194 0 0
W. Harvey, Southampton	1,175 0 0
Stevens & Sons, Southampton	1,167 0 0
John Frith, Bitterne	1,152 6 0
Honeychurch & Mitchelmore, Southampton	1,147 0 0
W. Simonds, Reading	1,145 0 0
Dyer & Sons, Southampton	1,144 0 0
E. W. Stagg, Eastleigh*	1,106 0 0
F. & W. Young, Southampton	1,089 0 0

* Accepted, conditionally.

STOKE NEWINGTON.—For rebuilding the Old Jolly Butchers, Stoke Newington. Mr. J. C. Reynolds, architect—

Drew & Cadman	£4,196 0 0
W. Shurmur	4,140 0 0
S. Goodall	3,923 0 0
J. Walker	3,618 0 0
J. Parker	3,595 0 0
Jackson & Todd	3,548 0 0

STOKE NEWINGTON.—For new entrances, caretaker's residence, and w.c. buildings, and enclosing additional land, &c., to Board Schools, High-street, Stoke Newington, in the Hackney Division of the School Board for London. Mr. T. J. Bailey, architect :—

Ward, Clarke, & Co.	£2,135	0	0
Simmons Bros.	1,997	0	0
C. Wall	1,650	0	0
J. Godfrey & Son	1,527	0	0
W. Johnson	1,499	0	0
Norris & Luke (accepted)	1,447	0	0

TOTTENHAM.—For school buildings, &c., at Braemar-road, Seven Sisters, Tottenham, for the Tottenham School Board. Mr. Chas. Bell, architect, 3, Salters' Hall-court, E.C. Quantities by Messrs. D. Campbell & Son :—

F. & H. F. Higgs, Loughboro' Junct'n	£19,210	0	0
Tarrant, Camberwell	19,130	0	0
Watson, Ascot	18,700	0	0
Taylor & Grist, Aylesbury	18,388	0	0
Ward, Clarke, & Co., New Cross	18,071	0	0
Kirk, Knight, & Co., Sleaford	17,860	0	0
Everitt & Son, Colchester	17,500	0	0
Dabbs, Stamford-hill	16,799	0	0
Hughes & Stirling, Bootle	16,495	0	0
Jas. Holloway, Lavender-hill	16,463	0	0
Hart, Southwark	16,430	0	0
Kilby & Gayford, Worship-street	16,230	0	0
Beaven, Bristol	16,200	0	0
Hinson Bros. Stamford	16,100	0	0
Balaam Bros., Old Kent-road	16,077	0	0
Shurmur, Hackney	15,958	0	0
H. L. Holloway, New Cross	15,943	0	0
Godfrey, Clapton	15,680	0	0
Flew, Kensington	15,620	0	0
No name	15,537	0	0
Smith, Norwood	15,450	0	0
Shillitoe & Sons, Bury St. Edmunds	15,195	0	0
Green & Lee, Hackney	15,160	0	0
Rudd & Son, Grantham	15,133	0	0
G. Stephenson, Bishopsgate	14,996	0	0
Allen & Sons, Kilburn	14,765	0	0
Barrett & Power, Hackney	14,264	0	0
C. Wall, Lots-road, Chelsea*	14,240	0	0

* Accepted, with certain reductions.

WANSTEAD (Essex).—For the erection of new boys' school, Cary-road, Wanstead, for the Wanstead School Board. Messrs. Bressey & Liddon Walters, architects. Quantities by Mr. F. Lee :—

Staines & Son, Great Eastern-st.	£6,777	0	0
H. Tarrant, Old Kent-road, S.E.	6,419	0	0
William Gregar, Stratford, E.	6,334	0	0
George Parker, Peckham, S.E.	6,260	0	0
A. Reed, Stratford, E.	6,249	0	0
D. C. Jones & Co. Gloucester	6,178	0	0
W. Watson, Ilford, E.	5,976	0	0
J. Catley, Leytonstone, E.	5,870	0	0
J. F. Coxhead, Leytonstone, E.	5,858	0	0
Charles Reed, Leytonstone, E.	5,797	0	0

[Architects' estimate, £5,975.]

WOOD GREEN, N.—For school buildings, &c., at Gladstone-avenue, Noel Park, Wood Green, for the Tottenham School Board. Mr. Charles Bell, architect, 3, Salters' Hall-court, E.C. Quantities by Messrs. D. Campbell & Son :—

F. & H. F. Higgs, Loughboro' Junct'n	£18,425	0	0
Tarrant, Camberwell	18,350	0	0
Ward, Clarke, & Co., New Cross	18,190	0	0
Hockley, Grantham	18,100	0	0
Kirk, Knight, & Co., Sleaford	17,850	0	0
Everitt & Son, Colchester	17,350	0	0
Dabbs, Stamford-hill	16,890	0	0
Hughes & Stirling, Bootle	16,460	0	0
Beaven, Bristol	16,300	0	0
Shurmur, Hackney	16,289	0	0
Kilby & Gayford, Worship-street	16,140	0	0
Balaam Bros., Old Kent-road	16,082	0	0
H. L. Holloway, New Cross	16,076	0	0
Hart, Southwark	15,965	0	0
Jas. Holloway, Lavender-hill	15,900	0	0
No name	15,837	0	0
Flew, Kensington	15,700	0	0
Smith, Norwood	15,650	0	0
Godfrey, Clapton	15,640	0	0
Green & Lee, Hackney	15,475	0	0
Hinson Bros., Stamford	15,340	0	0
G. Stephenson, Bishopsgate-street	15,215	0	0
Rudd & Son, Grantham	15,120	0	0
Shillitoe & Sons, Bury St. Edmunds	14,995	0	0
Barrett & Power, Hackney	14,914	0	0
Allen & Sons, Kilburn	14,823	0	0
C. Wall, Lots-road, Chelsea*	14,185	0	0

* Accepted, with certain reductions.

WOOLWICH.—For thirteen dwelling-houses, to be erected in Bull Fields, Woolwich, for the Home Counties Property Investment Company, Limited. Mr. Henry H. Church, architect, Woolwich :—

Holloway	£3,590	0	0
Jerrard	3,350	0	0
Arnold & Son	3,320	0	0
Johnson	3,240	0	0
Fenn	3,200	0	0
Kitley	3,150	0	0
Covil	3,146	0	0
Coombs	3,000	0	0

WOOLWICH.—For rebuilding Nos. 117, 118, and 119, High-street, Woolwich, for Messrs. J. K. Paine & Sons. Mr. Henry H. Church, architect, Woolwich :—

Hearle & Son, London	£5,226	0	0
Walker, Poplar	4,180	0	0
Lonergan Bros., Plumstead	3,900	0	0
Coombs, Plumstead	3,700	0	0

WOOLWICH.—For new billiard-room, for the Borough of Woolwich Conservative Club. Mr. Henry H. Church, architect, Woolwich :—

Coombs	£420	0	0
Pitchford	340	0	0
Foreman	335	0	0
Covil	326	0	0

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office, 19s. per annum (or 4s. 9d. per quarter), can ensure receiving "The Builder" by *Friday Morning's post*.

TO CORRESPONDENTS.

***Registered Telegraphic Address*, "THE BUILDER, LONDON."**

W. M'K. (it is not usual to pay travelling expenses in such a case, as far as we are aware).—W. A. S. (your plan is unpractical in more than one point, which we have not space to go into).—S. R. G.—G. F. H. (shall appear).—H. H. L. (too late).

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

FIRE BRICKS.

STOURBRIDGE BEST FIRE BRICKS, 80s. *M.*
Ditto FIRE CLAY, 25s. a ton.
Also in Stock: Fire Lumps, Fire Tiles, Boiler Seatings, and Flue Covers.
R. CULL & SON, Manufacturers,
City Stores:—Midland Railway Depôt, Royal Mint-street, Tower Hill, E.C.
City Office:—72, Palmerston-buildings, Old Broad-street, E.C.

GLAZED BRICKS.

Best quality—White Headers at 9*l.* 5s. *M.*
Stretchers at 10*l.* 5s. *M.* Quoins and Bullnose at 11*l.* 15s. *M.*
R. CULL & SON,
City Stores:—Midland Railway Depôt, Royal Mint-street, Tower Hill, E.C.
City Office:—72, Palmerston-buildings, Old Broad-street, E.C.

BLUE BRICKS.

Common Blue Bricks at 55s. *M.* Best Pressed Blue Facings at 65s. *M.* Bullnose and Stable Pavings at 70s. *M.* Plinths, Copings, Channels, &c. in Stock.
R. CULL & SON,
City Stores:—Midland Railway Depôt, Royal Mint-street, Tower-hill, E.C.
City Office:—72, Palmerston-buildings, Old Broad-street, E.C.

DRAIN PIPES.

4-inch. 3d. 6-inch. 4d. 9-inch. 7d. 12-inch. 11d. per ft.
Subject to a large discount for railway truck loads.
Bends, Junctions, Syphons, Gullies, &c. Kitchen Sinks, Closet Pans, &c. in Stock.
R. CULL & SON,
City Stores:—Midland Railway Depôt, Royal Mint-street, Tower-hill, E.C.
City Office:—72, Palmerston-buildings, Old Broad-street, E.C.

TERMS OF SUBSCRIPTION.

"THE BUILDER" is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum PREPAID. To all parts of Europe, America, Australia, and New Zealand, 26s. per annum. To India, China, Ceylon, &c. 30s. per annum. Remittances payable to DOUGLAS FOURDRINIER, Publisher, No. 46, Catherine-street, W.C.

Best Bath Stone.
CORSHAM DOWN. | FARLEIGH DOWN.
BOX GROUND. | COMBE DOWN.
WESTWOOD GROUND. | STOKE GROUND.
The BATH STONE FIRMS, Limited.
HEAD OFFICES: BATH.

DOULTING FREESTONE.
THE CHELYNCH STONE. The stone from these quarries is known as the "Weather Beds," and is of a very crystalline nature, and undoubtedly one of the most durable stones in England.
THE BRAMBLEDITCH STONE. Is of the same crystalline nature as the Chelynch Stone, but finer in texture, and more suitable for fine moulded work.
Prices, and every information given, on application to CHARLES TRASK & SONS, Doulting, Shepton Mallet.
London Agent—Mr. E. A. WILLIAMS, 16, Craven-street, Strand, W.C. [ADVT.

HAM HILL STONE.
Greater facilities have been provided for working these quarries, and the stone can be supplied in large quantities at short notice.
Prices, and every information given, on application to the HAM HILL STONE CO., Norton, Stoke-under-Ham, Somerset.
London Agent—Mr. E. A. WILLIAMS, 16, Craven-street, Strand, W.C. [ADVT.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds, and milk-rooms, graneries, tun-rooms, and terraces. [ADVT.

Asphalte.
Seyssel, Patent Metallic Lava, and White Asphaltes.
M. STODART & CO.,
Office:
No. 90, Cannon-street, E.C. [ADVT.

SPRAGUE & CO.,
LITHOGRAPHERS,
Employ a large and efficient Staff especially for Bills of Quantities, &c.
22, Martin's-lane, Cannon-street, E.C. [ADVT.

Garside's Noted Bedfordshire Coarse and Fine Silver Sand.—Is perfectly free from impurity, and the best and cheapest in the market. All qualities in stock, for every purpose required in the building trade, for filtration, or for nursery purposes. All pure grit!
Apply to GEORGE GARSIDE, JUNR., Leighton Buzzard. [ADVT.

W. H. Lascelles & Co.
121, Bunhill-row, London, E.C.
HIGH-CLASS JOINERY,
LASCELLES' CONCRETE,
CONSERVATORIES AND GREENHOUSES.
Estimates given on Application.

HOBBS, HART, & CO., Limited,

MAKERS TO HER MAJESTY BY SPECIAL APPOINTMENT.
The Bank of England and its Branches, including New Law Courts Branch, now building.

PATENT PROTECTOR AND LEVER LOCKS, for all Purposes.
STEEL SAFES, STRONG-ROOM & PARTY-WALL DOORS.
SELF-CLOSING DOORS, FOR THEATRES AND PUBLIC BUILDINGS,
As approved by the Metropolitan Board of Works (used in large numbers at Covent Garden Theatre).

IMPORTANT COMMUNICATION.—FIRE AT WHITELEY'S.

WILLIAM WHITELEY, Westbourne Grove,
London, Oct. 12th, 1887.

HOBBS, HART, & CO., LIMITED.

GENTLEMEN.—It affords me very much pleasure to express to you my satisfaction and admiration at the splendid fire-resisting powers of your Strong-room doors and the Safes.

The recent fire at my establishment in my opinion subjected them to the greatest possible test, and through all, they proved invulnerable.

The contents of both Strong Rooms and Safes were entirely preserved, although the fire was of such intense destructive force.

You will be pleased to hear that it has been decided to adopt your Patent Clutch-rebated Doors for all the party-walls in the new buildings now in course of erection.—I am, Gentlemen, faithfully yours,

(*Signed*) WILLIAM WHITELEY.

Offices and Warehouse: 76, CHEAPSIDE, London; Manufactories, Wharncliffe Works, Arlington-street, London, N.